

1 UNITED STATES DISTRICT COURT
2 EASTERN DISTRICT OF MICHIGAN
3 SOUTHERN DIVISION
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5) Civil Action No.:
IN RE: FLINT WATER CASES) 5:16-cv-10444-JEL-MKM
6) (consolidated)
)
7) Hon. Judith E. Levy
-----)
8) Mag. Mona K. Majzoub
)
Elnora Carthan et al. v.)
9 Governor Rick Snyder et al.)
)
10 -----)

11
12 HIGHLY CONFIDENTIAL
13 VIDEOTAPED DEPOSITION OF MIRA KRISHNAN, Ph.D.
14

15 MONDAY, OCTOBER 5, 2020
16 Volume 1
17

18 Remote oral videotaped deposition of MIRA
19 KRISHNAN, Ph.D., conducted at the location of the witness
20 in Grand Rapid, Michigan, commencing at approximately
21 9:04 a.m., on the above date, before JULIANA F.
22 ZAJICEK, a Registered Professional Reporter, Certified
23 Shorthand Reporter, Certified Realtime Reporter and
24 Notary Public.

1 APPEARANCES:

2 ON BEHALF OF INDIVIDUAL PLAINTIFFS:

3 NAPOLI SHKOLNIK PLLC
360 Lexington Avenue, 11th Floor
4 New York, New York 10017
212-397-1000
5 BY: PATRICK J. LANCIOTTI, ESQ.
planciotti@napolilaw.com

6

-and-

7

NAPOLI SHKOLNIK PLLC
8 2665 South Bayshore Drive, Suite 220
Coconut Grove, Florida 33133
9 212-397-1000
BY: LOUISE R. CARO, ESQ.
10 lcaro@napolilaw.com

11

-and-

12

LEVY KONIGSBERG, LLP
800 Third Avenue, 11th Floor
13 New York, New York 10022
212-605-6200
14 BY: COREY M. STERN, ESQ.
cstern@levylaw.com

15

16 ON BEHALF OF DEFENDANT CITY OF FLINT:

17 BUTZEL LONG
41000 Woodward Avenue
18 Stoneridge West
Bloomfield Hills, Michigan 48304
19 248-258-1616
BY: WILLIAM J. KLIFFEL, ESQ.
20 kliffel@butzel.com

21

22

23

24

1 APPEARANCES: (Continued)

2 ON BEHALF OF DEFENDANTS LEO A. DALY COMPANY, LOCKWOOD
3 ANDREWS & NEWNAM, INC. AND LOCKWOOD, ANDREWS & NEWNAM,
4 P.C.:

5 FAEGRE DRINKER BIDDLE & REATH, LLP
6 1717 Main Street, Suite 5400
7 Dallas, Texas 75201
8 469-356-2535

9 BY: TRAVIS S. GAMBLE, ESQ.
10 travis.gamble@dbr.com

11

12 ON BEHALF OF DEFENDANTS VEOLIA WATER NORTH AMERICA
13 OPERATING SERVICES, LLC, VEOLIA NORTH AMERICA, LLC AND
14 VEOLIA NORTH AMERICA, INC.:

15 CAMPBELL CONROY & O'NEIL, P.C.
16 1 Constitution Wharf, Suite 310
17 Boston, Massachusetts 02129
18 617-241-3063

19 BY: DAVID M. ROGERS, ESQ
20 drogers@campbell-trial-lawyers.com;
21 ALAINA N. DEVINE, ESQ.
22 adevine@campbell-trial-lawyers.com;
23 KRISTIN M. DUPRE, ESQ.
24 kdupre@campbell-trial-lawyers.com

25

-and-

26

27 MAYER BROWN LLP
28 71 South Wacker Drive
29 Chicago, Illinois 60606
30 312-782-0600

31 BY: SARAH E. REYNOLDS, ESQ.
32 sreynolds@mayerbrown.com

33

34

THE VIDEOGRAPHER:

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36 MR. DAVID LANE,
37 Golkow Litigation Services.

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1 THE VIDEOGRAPHER: We are now on the record. My
2 name is David Lane, the videographer for Golkow
3 Litigation Services. Today's date is October 5th,
4 2020, and the time is 9:04 a.m. Eastern Standard Time.

5 This remote video deposition is being held
6 in the matter of Flint Water Cases, restricted
7 distribution, bellwether depositions.

8 Our deponent today is Dr. Mira Krishnan,
9 Ph.D.

10 All parties to this deposition are
11 appearing remotely and have agreed to the witness
12 being sworn in remotely.

13 Due to the nature of remote reporting,
14 please pause briefly before speaking to ensure all
15 parties are heard completely.

16 Counsel will be noted on the stenographic
17 record.

18 The court reporter today is Juliana
19 Zajicek, who will now swear in our witness.

20 (WHEREUPON, the witness was duly
21 sworn.)

22 THE VIDEOGRAPHER: Please begin.

23 MIRA KRISHNAN, Ph.D.,
24 called as a witness herein, having been first duly

1 sworn, was examined and testified as follows:

2 EXAMINATION

3 BY MR. ROGERS:

4 Q. Okay. Dr. Krishnan, good morning. I
5 introduced myself to you. We introduced each other, I
6 guess, to each other. My name is Dave Rogers. I
7 represent the VNA Defendants. We did an audio test
8 earlier.

9 Can you still hear me all right?

10 A. Yes, Mr. Rogers, I can.

11 Q. And that's good. If you could please keep
12 your voice up at that volume and stay as close to your
13 screen where the microphone is, that would be good.

14 I would remind you that given that we are
15 doing this via Zoom, it's really even more important
16 that we both not speak at the same time. So if you
17 wouldn't mind, I found it useful if the witness, in
18 this case you, you have a little pause in between the
19 end of my question and when you begin your answer so
20 that the court reporter, Juliana, can get everything
21 down correctly and also that allows other people to
22 interject objections, if necessary, to any of the
23 questions that I ask you.

24 Okay?

1 A. Yes, I understand.

2 Q. See what -- you just did it, you just had
3 a little pause in there before the answer, so that --
4 that will make everybody's life easier today. Thank
5 you.

6 The first thing I want to clarify or I
7 guess confirm, you -- you heard our off-the-record
8 discussion that I had with Mr. Luc -- Lanciotti about
9 what I would describe as a narrowing of the focus of
10 your testimony.

11 You -- you heard what we talked about off
12 the record before we get started, right?

13 A. Yes, I did.

14 MR. ROGERS: And, Louise, I don't know if you
15 were on.

16 BY MR. ROGERS:

17 Q. But we talked about the issue of whether
18 or not, Dr. Krishnan, you were going to be offering
19 opinions at trial in this case with respect to the
20 issue of causation, and specifically whether or not
21 you were going to be offering any opinions about
22 whether or not any of the neuropsychological deficits
23 or impairments that you found in your testing for the
24 four bellwether plaintiffs were caused by or whether

1 or not lead contributed to causing those conditions.

2 And I understand that you are not going to
3 be providing that type of causation opinion testimony.

4 Is that right, everything I've said?

5 A. Yes, that's my understanding as well.

6 Sorry.

7 Q. The reason I ask is because in your
8 reports, there appear to be causation opinions
9 expressed.

10 Are -- is -- is it correct that you are
11 withdrawing those or at least that the bellwether
12 plaintiffs are withdrawing Dr. Krishnan as an expert
13 in causation at this time?

14 MS. CARO: Well --

15 BY THE WITNESS:

16 A. That is my under -- sorry.

17 MR. STERN: Hello?

18 THE WITNESS: Hello, who is -- who is on the
19 phone?

20 MR. STERN: This is Corey.

21 THE WITNESS: Okay.

22 MR. STERN: Hey, Louise.

23 MS. CARO: Hey. Go, Corey.

24 So -- so, she is not offering opinion as

1 to causation. She is offering opin -- opinion as to
2 her testing of each of the individual bellwethers and
3 the results that she found there, but not as to
4 causation.

5 MR. ROGERS: Yeah, so, Corey, I'm glad you
6 joined. We -- we had an off-the-record discussion
7 about the statements that you made at the hearing on
8 Friday; namely, that Dr. Krishnan was not going to be
9 providing testimony -- opinion testimony about
10 causation, so we are just trying to clarify that so
11 that we can streamline the deposition.

12 So, is that, in fact, correct, Corey, that
13 Dr. Krishnan will not be offering opinions about
14 causation with respect to any of the
15 neuropsychological deficits or impairments that she
16 has found in the bellwether plaintiffs?

17 MR. STERN: I -- I think it's fair to say that
18 it's not our intention to offer her as a causation
19 expert at trial. I think that her expertise is in the
20 testing and evaluation for neuropsychological
21 deficits. To the extent that she references in her
22 reports anything that she -- any conclusions that she
23 has made regarding those deficits, I mean, I think I
24 know where you are going, there are some things that

1 she says in her reports that could go to causation.
2 I'm not invalidating by agreement the things that she
3 said in her reports. I'm just telling you that the
4 reason that Dr. Bithoney was hired as an expert for
5 these four individuals is to take what Dr. Mira has --
6 has done and the conclusions that she has made and
7 opine about cause.

8 So, you know, she will not be offered at
9 trial as the -- as the causation expert for these
10 cases. However, it doesn't mean that anything she may
11 have said in her reports is no longer valid or true.
12 It is just that, you know, Dr. Bithoney may offer
13 testimony about a neuropsychological exam. That
14 doesn't mean he is an expert in performing that
15 testing or has the credentials to -- to opine on that.

16 So, there may be a little bit of
17 crossover, but she is not the causation expert that
18 will be offered for these four bellwether plaintiffs
19 at trial.

20 MR. ROGERS: Okay. Well, I -- I think I have an
21 understanding, but just to make sure, let me just pull
22 up the transcript here and we'll -- we'll see if we
23 can get this clarified. So I'm going to share my
24 screen.

1 BY MR. ROGERS:

2 Q. And, Dr. Krishnan, can you see the screen
3 that I am sharing with you now?

4 A. Yes, I see your -- your file browser.

5 Q. Okay. I'm going to open up a document
6 entitled "Hearing Transcript," and Juliana, can we
7 mark this Exhibit 1.

8 (WHEREUPON, a certain document was
9 marked Mira Krishnan, Ph.D.
10 Deposition Exhibit No. 1, for
11 identification, as of 10/05/2020.)

12 BY MR. ROGERS:

13 Q. This is the hearing transcript from Friday
14 afternoon's hearing in which I participated as well as
15 Mr. Stern.

16 And on Page 5 of the transcript, I've
17 highlighted a section here.

18 Can you see that okay, Doctor, now?

19 A. Yes.

20 Q. It says -- Mr. Stern says: "Okay. No
21 problem, your Honor.

22 "Dr. Krishnan is a neuropsychologist who
23 evaluated each of the four bellwether trial plaintiffs
24 for cognitive deficits and will be testifying about

1 her perceptions, her conclusions, her testing and the
2 cognitive deficits that she may have found through her
3 testing and evaluations."

4 Is that a correct statement, Doctor?

5 A. Yes, I think so. To my understanding that
6 is correct.

7 Q. Thank you.

8 The next section that I'd like to show
9 you --

10 MR. STERN: Are we on the -- are we on the
11 record, Dave?

12 MR. ROGERS: Yes.

13 MR. STERN: Okay.

14 BY MR. ROGERS:

15 Q. The next section on Page 6 is the Court,
16 that is the Judge, asks:

17 "Now, is his testimony -- it sounds like
18 Dr. Krishnan's testimony goes to damages. Does it
19 also go to causation in general?"

20 And Mr. Stern says: "Neither of them go
21 to causation."

22 The neither of them, Dr. Krishnan, is
23 reference to, there was also some reference to
24 Dr. Aaron Specht at this point during the -- the

1 hearing.

2 But then Mr. Stern -- the Court says:

3 "Okay."

4 And Mr. Stern goes on to say:

5 "Dr. Krishnan will testify: 'I did testing and these
6 were the results.'"

7 And the Court says: "Okay."

8 And then Mr. Stern says: "'I can't tell
9 you why. That's not my expertise. I could just tell
10 you what I found.'"

11 Is that correct?

12 A. So, this hearing, to my understanding,
13 happened after these evaluations were completed and
14 after these reports were written. I am able to do
15 what Mr. Stern asks in the transcript.

16 Q. Yeah, but, I mean, does it mean that you
17 are not intending to offer opinions at the trial of
18 the case about causation, that is to say, for the four
19 bellwether plaintiffs where you have found various
20 impairments, that you are not going to testify about
21 the cause of those impairments; namely, whether or not
22 lead caused them or was a contributing factor in
23 causing them?

24 A. So my understanding from this conversation

1 is that -- that plaintiff counsels are going to
2 present other experts for that purpose.

3 Q. Not you?

4 A. That is what I understand.

5 Q. So do you hold professional opinions as an
6 expert in this case that you intend to testify about
7 at trial concerning causation, that is, what caused
8 the neurological deficits or impairments that you
9 found in your testing?

10 A. So, in general, what I can tell you is
11 that neuropsychologists who consider individuals with
12 claims of injury or impairment routinely consider the
13 type of injury they sustained in evaluating the
14 impairment. The example -- an example that I
15 sometimes give is that if I tap you on the arm, you
16 may sustain a range of injuries from me tapping you on
17 the arm. Most people would be uninjured by that. If
18 you had some kind of pain condition, me tapping you on
19 the arm might be painful, but there would be other
20 kinds of injuries that would be very rare, you know,
21 maybe there is somebody who has some kind of bone
22 disorder and I break your arm just by tapping it.
23 That would be very rare. There also would be
24 impaired -- impairments that would be entirely

1 unlikely to occur, like if I tapped you on the arm and
2 you alleged that you went blind.

3 So in general, neuropsychologists who deal
4 with injuries consider the -- the type or source of
5 the injury to look for impairments that may be
6 plausible or consistent with that kind of injury.

7 I don't know if that's the same thing as
8 causation as you are defining it, but when I evaluated
9 the children, I considered whether -- for each of
10 these bellwethers -- the kinds of impairments they had
11 were within the realm of the impairments that are seen
12 as the result of the type of alleged injury in this
13 case, that exposure to lead.

14 Q. Well, I guess I'm still not -- not clear.

15 MR. ROGERS: Perhaps, Corey, you could help me
16 out or -- or Louise or whoever.

17 If the Doctor is not going to present
18 testimony, opinion testimony at trial about what
19 caused the children's deficits that she has found, and
20 particularly she is not going to testify that lead was
21 a contributing factor in causing those deficits, the
22 deposition will be different than what it would be if,
23 in fact, she is doing that.

24 So I'm -- I'm just not clear. Can you

1 elaborate?

2 MR. STERN: Well, Dave, Dave, Dave, to be clear,
3 what I said on the record was that we will not be
4 offering her to testify to certain things at trial.
5 There are plenty of experts who have overlapping
6 opinions, and I think you are entitled to ask her
7 whatever you want based on the reports that she has
8 written, but I've represented to the Court that at
9 trial Dr. Krishnan is not intended to be put forth to
10 a jury for the purpose of testifying about causation
11 and I also represented to the Court that Dr. Krishnan
12 is talking about four individual children, not the
13 entire community of children who allege that they were
14 poisoned.

15 So I'm not -- I'm not going to limit her
16 testimony for this deposition. If you have questions
17 you want to ask her based on her report, I mean, you
18 are -- you are entitled to ask her whatever you want,
19 and her report speaks for itself. I'm just -- I --
20 I -- I informed the Court that the structure of our
21 case as we envision it for trial is that Dr. Krishnan
22 is an expert and will be qualified as an expert to
23 testify about cognitive deficits and the testing that
24 was performed and is typically performed to determine

1 if -- to determine cognitive deficits.

2 Dr. Bithoney, based on his experience and
3 evaluating over 5,000 children with lead poisoning,
4 including the pathology and the mechanisms in which
5 lead poisoning occurs, will testify about whether
6 the -- the deficits seen by Dr. Krishnan, observed by
7 Dr. Krishnan, and reported on by Dr. Krishnan were
8 caused by exposure to lead.

9 And Dr. Crates (phonetic) will testify
10 that what the value of all of those claims are,
11 assuming that the reports of Krishnan and Bithoney are
12 true.

13 Does that mean that Dr. Bithoney doesn't
14 have some understanding that kids who were lead
15 poisoned typically earn less money over the course of
16 their life, no. Does that mean that he can't say that
17 on the record, no. But he is not going to be
18 qualified as an economist to talk about lost earnings
19 for children who are lead poisoned.

20 Dr. Krishnan is not going to be attempted
21 by us to be qualified as an expert who could talk
22 about why her observations were caused, what caused
23 them. She -- I'm sure she is able to talk about in
24 her experience and her expertise in evaluating lead

1 poisoned children that what she saw in these children
2 is common for kids who were exposed to lead. That
3 doesn't require expertise. That's just a
4 neuropsychologist who has seen other kids.

5 So, I'm not going to -- I'm not going to
6 agree to limit her testimony in this deposition to
7 this narrow scope where it is just the testing, but I
8 am being candid with you, as I was with the Court,
9 that it is not our intention to offer her as an expert
10 in causation because her expertise is -- is limited in
11 this case to her observations and testing of these
12 children.

13 BY MR. ROGERS:

14 Q. Dr. Krishnan, let's start with some basic
15 background questions and then we'll move on into some
16 of the documents.

17 MR. STERN: Can I ask one more question before
18 we start, Dave?

19 I'm not defending this deposition, Louise
20 is, because I cannot be on the deposition the entire
21 time. For the record, I have issues with my children
22 today that require me to -- to be away from this
23 deposition for an extended period of time, but I want
24 to make sure, and I'm sure it has already happened,

1 that there is no one on this deposition who would
2 violate the order that was entered by the Court on
3 Friday, meaning everyone on this deposition is either
4 Dr. Krishnan, the attorneys representing the
5 individuals whom hired Dr. Krishnan, or defendants who
6 have been sued by the individuals, the four bellwether
7 individuals, and who will be at the trial of this
8 case, as well as the court reporter and the
9 videographer.

10 Is that true?

11 MR. LANCIOTTI: Yeah, hey, Corey, this is
12 Patrick. We are -- we are good there.

13 MR. STERN: So there is not a single person for
14 the putative class that's on this -- that's on this
15 deposition or attempted to be; is that correct?

16 MR. LANCIOTTI: No, I don't believe so. I
17 see -- I see one individual with the name "Documents."
18 I believe Dave is using that account, if I'm not
19 mistaken. Dave can clarify.

20 THE VIDEOGRAPHER: That's David. David the
21 videographer.

22 MR. LANCIOTTI: Okay. So, then, yes, so then we
23 are -- we are all good, Corey.

24 MR. STERN: All right. Sorry, everybody, I'm

1 going to shut up now.

2 Louise, Dr. Krishnan, it is your show.

3 Dave, do your best and forget the rest.

4 MS. CARO: Well, thanks for that clarification,
5 Corey. That was really helpful.

6 BY MR. ROGERS:

7 Q. Yes, so, Dr. Krishnan, I'm -- I'm going to
8 proceed on the understanding that you, as we confirmed
9 earlier, I think, that you will not be providing
10 causation opinions at the trial of the case; namely,
11 as to what caused -- what was the cause of the
12 deficits that you found in the testing based on the
13 statements of counsel.

14 So, but anyway, let's -- let's proceed.
15 So basic questions, when were you first retained as an
16 expert in the case?

17 A. I reviewed my records and I believe that I
18 was retained on the 1st of May.

19 Q. By whom?

20 A. I was originally retained by -- by Napoli
21 through Paul Napoli and Patrick Lanciotti and Hunter
22 Shkolnik.

23 Q. When you were retained or shortly
24 thereafter, did you learn as to whether or not, and

1 I'm going to just restrict my questions now to the
2 four bellwether plaintiffs who have been chosen for
3 trial, that is to say, and I'm -- if you don't mind,
4 I'm going to refer to them by their last names just
5 because it is easier for me to keep track of, but the
6 child S[REDACTED], T[REDACTED], V[REDACTED] and W[REDACTED].

7 You have an understanding that those are
8 the four bellwether plaintiffs that the deposition is
9 going to be limited to and those are the four
10 bellwether plaintiffs who will be in the first trial
11 of the case, right?

12 A. Yes, that was communicated to me prior to
13 this deposition.

14 Q. Okay. So, with respect to those four,
15 at -- at the point in time that you were retained, was
16 there any discussion about whether or not any
17 neuropsychological testing had been done on those
18 children before you were retained?

19 A. So, as a matter of course, I -- I asked
20 about what kinds of background information were
21 available. As I believe you may know, I was
22 ultimately retained by both the Napoli and Levy
23 Konigsberg, and to the best of my understanding these
24 children were represented by Levy Konigsberg, although

1 I understand that the two law firms are working
2 together, and I have been working at the direction
3 of -- of lawyers from both law firms.

4 So in that original discussion, as it
5 happens, these four bellwethers were not a part of
6 that discussion. I was asked to see them slightly
7 later. But I did ask if prior testing had been done
8 for the bellwethers, both in the original case with
9 the original ones that I was asked to see and then
10 also when these ten were added from Levy Konigsberg.

11 Q. Right. So what's the answer, was
12 neuropsychological testing done, evaluations of these
13 four before you?

14 A. To the best of my knowledge, the only --
15 only one bellwether that I saw had prior
16 neuropsychological testing. That child is not one of
17 these four.

18 Q. Which one was that?

19 A. That was, I believe -- sorry?

20 MS. CARO: I was going to say, objection,
21 outside the scope of this deposition.

22 You can answer.

23 BY THE WITNESS:

24 A. I believe that was SPPI BPPI

1 G[REDACTED].

2 BY MR. ROGERS:

3 Q. Okay. So just to confirm then, you are
4 not aware of any previous neuropsychological testing
5 of the type that you did on the plaintiffs S[REDACTED],
6 T[REDACTED], V[REDACTED] or W[REDACTED], correct?

7 A. Correct.

8 Q. What was your assignment in the case as an
9 expert?

10 A. I was asked to complete neuropsychological
11 evaluations of the bellwethers, consisting of
12 interviewing them and their parents and completing
13 cognitive and emotional tests and drawing conclusions
14 about impairment on the basis of that testing.

15 Q. And what did you do to carry out that
16 assignment with respect to the bellwether plaintiffs,
17 the four, and I'll just refer to them as the four to
18 keep it simple?

19 A. So I received a package of records to
20 review in each cases -- each of the cases and I
21 reviewed records prior to meeting with the families.
22 In the case of these four bellwethers, I met the
23 families in person in Flint and completed interviews
24 of the families and then I tested the children in

1 person and completed reports.

2 Q. Since the time that you've -- or when you
3 did the testing, I noted on your reports that there is
4 a date, DOE, date of evaluation, is that right?

5 A. I believe that's correct.

6 Q. So, basically what you did is received
7 records and you reviewed them, you interviewed the
8 parents and/or the individual children, and then you
9 did your neuropsychological testing, is that correct?

10 A. Correct.

11 Q. And after you did your evaluations and
12 your testing for each, when is it that you wrote the
13 reports that were generated and provide -- produced to
14 us as an expert disclosure in the case?

15 A. In general I wrote the reports over the
16 following few days. The -- I believe that there is a
17 date indicated by the physical signature on the report
18 and that was the date on which the report was
19 finalized.

20 Q. I see. Okay.

21 You mentioned interviewing the plaintiffs
22 and the parents. In the materials that I have
23 received, I haven't seen any interview notes.

24 Did you take notes?

1 A. These evaluations were all completed
2 during the COVID -- COVID-19 pandemic and in general I
3 took measures to reduce risk, including minimizing
4 materials. I took notes directly on my computer in
5 these cases.

6 Q. Yes, so --

7 A. It is something that I have been doing in
8 my clinical practice during that time as well.

9 Q. Do you have those notes?

10 A. Meaning that I wrote the notes directly
11 into the report Word documents. I don't have any
12 other notes from the examinees other than the ones
13 that -- all -- other than the information that's in
14 the report.

15 Q. So the procedure that you followed when
16 you interviewed the parents and the children was that
17 you would have -- you had your laptop or computer with
18 you at that time and you were transcribing or typing
19 in the information that they provided to you, is that
20 right?

21 A. Correct.

22 Q. And that those notes, of course, would
23 have been being taken by you contemporaneous or during
24 the interview process, is that right?

1 A. Yes, that's correct.

2 Q. And then so was that in an Word document
3 or something like that format?

4 A. So, if you look at the reports that I
5 wrote, there is an interview section and it begins
6 with something like: I eval -- reviewed early
7 development in detail with the family, I typed that
8 portion of the report contemporaneously with
9 interviewing the families.

10 Q. So that's what I'm saying.

11 So, apart from that section of your
12 reports where it says -- it's entitled "Interview,"
13 you do not have or maintain any separate documents,
14 computer-generated documents or handwritten notes or
15 anything other than what's contained in your report,
16 is that right?

17 A. With respect to the interview, that --
18 that is correct.

19 Prior to COVID-19, I would use paper forms
20 to write interview notes down, but at the time I
21 believe that this was a move that would reduce the
22 level of risk involved, and so I eliminated using
23 those paper notes around this time.

24 Q. Just to be clear then, so apart from

1 the -- what is recorded in your reports under the
2 section Interview, there are no other
3 computer-retained documents or handwritten documents
4 concerning your interviews of the -- of the parents
5 and the children, right?

6 A. That's correct.

7 Q. I want to ask you some questions to make
8 sure that I know what are in your file materials.

9 I had requested of Patrick and Corey
10 that -- we had a -- let me just explain, Doctor. We
11 had in a -- in a court order there is a requirement
12 that the expert files be turned over seven days in
13 advance of the deposition. And I did some follow-up
14 to get your CV and list of publications and things
15 like that, but I didn't receive your whole file,
16 meaning I didn't receive the education records or
17 medical records that you would have received for each
18 of these patients.

19 So, I had asked for whether there was an
20 index that could be provided so that I could check to
21 make sure that what you had and reviewed for each
22 child is information that I also possess.

23 So, is there some way that we could do
24 that? How -- how -- do you have an index of the

1 materials that were provided to you when you were
2 first retained with respect to these four children,
3 and I'm not talking about the work that you did, I
4 mean education records, medical records and things of
5 that type?

6 A. I don't -- I did not prepare an index of
7 them. I reviewed them and summarized them in my
8 reports and that's the only document that I produced
9 in relation to them.

10 Q. Okay. So somewhere in your file materials
11 you do have those materials, right?

12 A. Yes.

13 Q. So I'm going to request that we do that.
14 Is there -- would that be a relatively easy thing for
15 you to do, to just create an index of what the
16 materials are that you were provided?

17 A. Would you -- are you asking me to produce
18 an index of the materials or are you asking me to
19 produce the materials themselves?

20 Q. No, I don't -- I don't need the materials
21 themselves, just a list, so that with respect to, for
22 example, let's take the plaintiff SPPI [REDACTED], you
23 received medical records, employment records -- I'm
24 sorry, not employment -- education records, fact

1 sheets, discovery responses, stuff like that, right?

2 A. Correct.

3 Q. So I'm asking you if you could prepare a
4 list of those materials so that I know what's in your
5 complete file?

6 A. Yes, I -- I believe I -- sorry.

7 MS. CARO: She can -- she can provide a -- a
8 verbal list right now in deposition of what she went
9 through. Why don't we do that?

10 BY MR. ROGERS:

11 Q. Well, do you have the file materials with
12 you?

13 A. I was asked not -- my understanding
14 generally of depositions is I don't have any materials
15 in front of me at the moment.

16 Q. So how --

17 A. I do have them on my computer.

18 Q. Yeah, I -- I don't -- that would be fine,
19 if you -- I -- I would like to have a list, a written
20 list, but if you have access to what you were provided
21 on your computer and you read them off, I guess that
22 would constitute the list.

23 MS. CARO: So you are saying you want a list
24 provided at some point during the deposition or after

1 the deposition? What are you requesting exactly?

2 MR. ROGERS: Well, actually, Louise, I requested
3 from Patrick and Corey a list about a week or so ago.
4 I never received a response to it, so I'm following
5 up. I mean, I -- I don't know what the issue is.

6 MR. STERN: Yes, since -- I mean, since -- since
7 we are on the record, I mean, you asked for her
8 records and she gave you the records. Why does she
9 need to make you a list when you have all of the
10 records. Why can't you make the list?

11 MR. ROGERS: That's incorrect, Corey. Excuse
12 me. That's not correct. What I have is her testing
13 and her reports. I don't have the materials, I don't
14 know what's in her file with respect to the materials
15 that she received from you and/or Patrick about these
16 plaintiffs. That's what I'm referring to.

17 MS. CARO: So it was my understanding that you
18 were provided the filings, so now you are saying that
19 you were not provided her files?

20 MR. ROGERS: I just said I was -- correct, I was
21 not provided her files, meaning the files that she
22 received from the plaintiffs' lawyers about the
23 individual plaintiffs, including education records,
24 any fact sheets or discovery responses, medical

1 records, blood test reports, et cetera.

2 MS. CARO: So you don't have any of those
3 materials?

4 MR. ROGERS: I don't have them from her file.
5 That is the point of the question. I want to be able
6 to make sure that, in fact, I know what she has had
7 and reviewed and that we have those things, Louise.

8 MS. CARO: Well, you could always show her what
9 you have and -- and ask her questions about that
10 material.

11 MR. ROGERS: No, look, the court order required
12 that the expert provide her file seven days in advance
13 of the deposition. I don't have it. I don't have
14 those materials from her file. That's the point.

15 It's a -- it's a very simple thing. If
16 she would just provide me a list of what's in the file
17 that she received for these four plaintiffs, we can
18 confirm that we have that material, being -- having
19 been produced separately to us. I don't know what the
20 problem is.

21 MS. CARO: It's not a problem. It's just that
22 my understanding is that we did provide her files, so
23 we're -- we seem to have a -- some sort of
24 miscommunication here. I don't know if Corey or

1 Patrick could chime in on that, but I'm told that you
2 have been provided her files. So...

3 MR. STERN: I didn't provide anything to the
4 defendants. Patrick, I think, has been the person who
5 has communicated with them of actual documents. So if
6 you don't have -- you know, I don't have the order
7 from the Court in front of me. I don't know what you
8 are entitled to, but I have no problem with her
9 telling you exactly what she was provided in order to
10 interview these folks and -- and begin the process of
11 creating an opinion about it.

12 MR. ROGERS: Well, what about a list? I
13 don't -- why can't --

14 MR. STERN: Are you asking for, like, to suspend
15 the deposition so she can provide you a list or do you
16 want a list at some subsequent time or do you want to
17 go through each individual plaintiff and say: For
18 Mr. VPP [REDACTED], what were you provided, for Ms. WPP [REDACTED],
19 what were you -- like what are you -- you are entitled
20 to it, you are going to get it. Are you -- how are --
21 how are you wanting this information to be
22 disseminated to you and at what point in time?

23 BY MR. ROGERS:

24 Q. I was entitled to the information seven

1 days ago, but be that as it may, I would like to have
2 a written list of the materials, Dr. Krishnan, that
3 were provided to you for each of these four
4 plaintiffs, and as of right now, if you have access to
5 your computer where you could describe on the record
6 what those materials are, that would be great. Let's
7 do that.

8 A. Okay. I -- I have -- if that is fine with
9 it.

10 MS. CARO: Do you want to take a break to get
11 prepared to do that?

12 THE WITNESS: We can do that. I just -- before
13 we take a break, I would just like to make sure I
14 understand.

15 BY THE WITNESS:

16 Q. Forgive me. I have been asked to provide
17 reports in cases that are similar to this before. I
18 want to make sure that I understand what you are
19 asking of me.

20 You are asking me to tell you what
21 documents the two law firms provided me for each of
22 these four children, meaning you want -- does that
23 mean that you want file names for these documents?

24 BY MR. ROGERS:

1 Q. I just want to know what materials were
2 provided to you. I don't know how to explain it any
3 better. It doesn't seem to be that hard.

4 MS. CARO: So I would say make a list -- make a
5 list of the files you have -- were given for each of
6 the clients, like what -- what was it contained in
7 there, was it a doctor record, was it a school record,
8 that for each of the four, if you could just make a
9 list, we'll take a little break and you can make a
10 list so that way you can go through that list for him
11 when we come back.

12 MR. ROGERS: No, Louise, I would like a written
13 list to be produced at some point. For purposes of
14 now, if you could just get access to your computer,
15 Doctor, open up your files on these plaintiffs and
16 describe on the record what the materials are that you
17 received on each plaintiff starting with plaintiff
18 SPPI [REDACTED].

19 BY MR. ROGERS:

20 Q. Am I pronounced that right, is it SPPI [REDACTED]
21 or SPPI [REDACTED]?

22 A. I believe it is SPPI [REDACTED].

23 Q. SPPI [REDACTED]. Okay. So that's -- that's what
24 I'm asking you to do.

1 So do you want to take a couple minute
2 break to get your computer and then you can open up
3 the files and you can tell me what's in there for the
4 plaintiff SPPI [REDACTED]?

5 MS. CARO: Right, and Counsel, of course we need
6 to see her list before she would provide it. So we
7 definitely need a little break and let her do that
8 and -- and then we can get on the record and get
9 moving.

10 MR. ROGERS: Yeah, but Louise, I'm not asking
11 for her to write a list now. To be clear, I'm asking
12 her to open up her computer where she has these files
13 and on the record describe what's in there, okay. So
14 let's take a couple minute break.

15 MS. CARO: Let's take a break.

16 MR. ROGERS: Listen, I'm not -- I'm not -- under
17 the Federal Rules, you know, draft reports and/or
18 communications between counsel are not discoverable.
19 I'm not asking for that kind of stuff. I'm talking
20 about the materials, Doctor, like education records,
21 medical records, fact sheets, discovery responses or
22 other things about these plaintiffs that were provided
23 to you, okay.

24 MR. STERN: Great. Let's come back at 9 --

1 9:55.

2 THE VIDEOGRAPHER: Off the record, 9:41 a.m.

3 (WHEREUPON, a recess was had

4 from 9:41 to 9:54 a.m.)

5 THE VIDEOGRAPHER: Back on the record, 9:54 a.m.

6 BY MR. ROGERS:

7 Q. Okay. Dr. Krishnan, thanks for making the
8 effort to get another computer that you can access and
9 so that we can get this done.

10 So, let's just start with the plaintiff

11 SPP, EPP, SPP.

12 Would you just tell me what are the
13 materials that you received concerning him?

14 A. So I'm going to describe the files that I
15 have, they are PDF files on my computer, and the dates
16 of specific care were records that are within these
17 documents are -- are reviewed and in my reports.

18 For EPP, SPP, I received a file with a
19 long file name, but it is a set of records from
20 Brownell K-2 STEM, S-T-E-M, Academy. I received
21 records from Integrated Providers, Medical Records
22 Department. I received a document containing bone
23 lead results. I received a document from Dolven
24 Pediatrics, D-o-l-v-e-n. I received the Plaintiff

1 Fact Sheet. I believe that's what PFS stands for. I
2 received a document entitled "GCHD," I believe that's
3 Genesee County Health Department, "Lead Level." And
4 then I received a deposition transcript from I believe
5 Mr. Wheeler. And those are all of the documents that
6 I have for EPPPI SPPPI.

7 Q. Thanks.

8 Can you go on to -- let's do this in
9 alphabetical order. The plaintiff T PPI, please.

10 A. Okay. Let me find the correct file. I
11 have these all up in front of me. Okay. Sorry.

12 For A PPI T PPI, the documents that I
13 have are a set of records from Genesee County Health
14 Department, another set of records also from Genesee
15 County Health Department, a set of records from
16 Genesys Interactive -- Integrated Group Practice,
17 Genesys is G-e-n-e-s-y-s. I received records from
18 Grand Blanc Academy registrar, G-r-a-n-d B-l-a-n-c. I
19 received records from Freeman Elementary School. I
20 received two sets of extra records after the initial
21 set of records. These are both blank. They only
22 consist of a request form to the referral source.
23 Then I received a Plaintiff Fact Sheet, bone lead
24 results, a deposition of Apricot T PPI and records from

1 Genesys Peds, again, G-e-n-e-s-y-s, and records from
2 WIC, W-I-C.

3 Q. What's that?

4 A. Women, Infant and Children.

5 Q. Okay. Thank you.

6 Does that -- that complete it for T PPI?

7 A. Correct.

8 Q. Okay. Can we move to V PPI, please?

9 A. For R PPI V PPI, I received records
10 from Mott Children's Health Center; from Weston
11 Elementary School, W-e-s-t-o-n; I received a set of
12 records that are from Warde Med Lab, W-a-r-d-e; I
13 received bone lead results; I received GCHD Lead
14 Level; I received records from Mott Hospital, M-o-t-t,
15 that are entitled "Peds, Lead Level"; I received the
16 Plaintiff Fact Sheet; and I received V PPI
17 deposition transcripts.

18 Q. Thanks.

19 And then for W PPI, would you complete it?

20 A. For D PPI W PPI, I received records from
21 Warde Med Lab, W-a-r-d-e; I received records from
22 Hurley Medical Center, H-u-r-l-e-y, Records
23 Department; and Hurley Medical Center Pathology
24 Department. I received records from Hamilton

1 Community Health Network, Main Clinic. I received
2 records from Colonel Donald McMonagle Elementary
3 School, M-c-M-o-n-a-g-l-e. I received records from
4 Doyle Ryder Elementary School, D-o-y-l-e R-y-d-e-r. I
5 received a set of extra records that, again, contained
6 only a request for information but no actual records.
7 And then I received bone lead results; a Plaintiff
8 Fact Sheet; records from Hamilton Peds, Lead Level;
9 records from Hurley Birth, Peds, P-e-d-s; and then I
10 received a Martin deposition transcript.

11 Q. Those documents that you said were blank
12 or were just record request forms, were those forms
13 for entities or institutions different from the
14 records that you did receive, that is, some other
15 place?

16 A. I -- I would have to check that. I -- I
17 generally don't report on records that I don't have to
18 review.

19 Q. Well, could you -- can you open up the
20 file that has the request form and then see if it's a
21 request for records that you already had or if it's a
22 different place?

23 A. Just one moment, please.

24 So, for D PPI [REDACTED] W PPI [REDACTED], there is a request

1 from a -- to an Aaron Specht, A-a-r-o-n, S-p-e-c-h-t,
2 and that is -- that appears to be all that is in here.

3 Q. Is that a request from you to Dr. Specht
4 or someone else to Dr. Specht or what?

5 A. It -- the document is generated by the
6 Marker Group.

7 Q. Did you -- do you know whether you
8 received anything from Dr. Specht besides the bone
9 lead -- the bone scan lead report printout sheet?

10 A. I did not receive anything that is not
11 reviewed in my report.

12 Q. Well, I -- what we have received for the
13 bone lead scans is -- so far, anyway, from Dr. Specht
14 was just a one-page sheet.

15 Is that what you got?

16 A. Yeah, I believe so. I -- I actually am
17 not clear on who Dr. Specht is.

18 Q. Well, he is another consultant that --
19 expert that the plaintiffs have retained who did the
20 bone lead scans or at least, if he didn't do them, you
21 know, he was in charge of having them done. So that's
22 who he is.

23 So I'm just trying to clarify, did you
24 receive anything from anything that Dr. Specht did

1 with respect to these plaintiffs besides just the one
2 page sheet reporting the results?

3 A. I received the documents that I just read
4 to you.

5 Q. All right. Well, let's -- we are going to
6 have to open it up. Would you open up the bone lead
7 scan for that file for WPPi and just tell me what's in
8 it?

9 A. The bone lead file is a one-page document
10 that has a bone lead results.

11 Q. Okay. So then is it your memory with
12 respect to the bone lead results for each of these
13 plaintiffs, that's the record you received, just that
14 one page?

15 A. That's correct.

16 Q. Okay. Does that complete your description
17 of the file materials that you received concerning
18 each of these plaintiffs from the plaintiff's lawyers
19 at some point in time after you were retained in the
20 case?

21 A. Yes, it does.

22 Q. And you didn't receive any other materials
23 besides those, right?

24 A. To the best of my knowledge, I did not

1 receive any medical records to review other than the
2 ones that I have read to you. I did not receive any
3 other educational records other than the ones that I
4 have read to you, either, for these four bellwethers.

5 Q. I haven't heard you refer to any
6 deposition transcripts yet except the depositions of
7 the parent representatives of these four bellwether
8 plaintiffs.

9 Did you receive any other deposition
10 transcripts that have been taken in the case of anyone
11 besides the parents of the four bellwethers?

12 A. I did not receive any depositions related
13 to these four bellwethers, other than the ones I
14 listed in the list of documents I just provided to
15 you. And I didn't review any depositions other than
16 the ones that are in my reports, to the best of my
17 knowledge.

18 Q. So -- yeah, did -- as part of your work on
19 the case, whether it's for these four bellwethers or
20 not, did you receive and review any other deposition
21 transcripts besides those of the parents?

22 A. To the best of my knowledge, no. They
23 were all depositions of parents.

24 Q. All right. I wanted to just get marked

1 and find out what else is in your file or other
2 materials that you have produced and make sure that we
3 have everything complete.

4 So I'm going to mark as Exhibit No. 2, and
5 I'll share my screen, your CV.

6 (WHEREUPON, a certain document was
7 marked Mira Krishnan, Ph.D.
8 Deposition Exhibit No. 2, for
9 identification, as of 10/05/2020.)

10 BY MR. ROGERS:

11 Q. Okay. This is what I was provided by
12 Mr. Lanciotti, I think, on Friday or Saturday.

13 Can you see that all right, Dr. Krishnan?

14 A. Yes, I can.

15 Q. Is that big enough? I have it at
16 100 percent. Is that big enough on your screen?

17 A. That's fine. Thank you.

18 Q. Okay. So this has been marked as
19 Exhibit 2.

20 Is this a complete and current CV. I'm
21 going through it pretty fast, but does that look like
22 your complete and up-to-date CV?

23 A. I -- I update my CV from time to time. I
24 was asked to produce a CV for my adjunct position at

1 Michigan State a few days ago, and I added maybe one
2 thing to it, but it was current at the time that I
3 sent it to you.

4 Q. Okay. What -- do you have different CVs?

5 A. No. In general I just have the one.

6 Q. Well, I -- you mentioned that it was a CV
7 that you updated for purposes of your adjunct
8 professor work at Michigan State. That's why I asked.

9 Is there -- are there other CVs besides
10 this one?

11 A. It is just a newer version of the same CV.

12 Q. That's what I'm asking. So you don't have
13 any other CVs besides this one, that's the other one?

14 A. Correct.

15 Q. Okay. There are -- there were other CVs,
16 but they are prior versions of this one, right?

17 A. In the course of my lifetime, I've had a
18 different CV than this one, but at any given time I
19 only maintain one CV.

20 Q. Okay. I'm going to come back to this
21 because there are some things that I have to ask you
22 about, but let's just get things marked first and
23 we'll make sure we have everything.

24 I want to ask you about a testimony list.

1 You know in the Federal Court under the Federal Rules,
2 you are required to produce deposition -- a list of
3 your depositions or trial testimony for the previous
4 four years.

5 Do you -- have you testified in a
6 deposition or in a trial at any point in time in the
7 last four years, whether it be a civil or a criminal
8 case?

9 A. To the best of my knowledge, I have not.

10 Q. Why do you say to the best of your
11 knowledge?

12 A. I have testified several years ago in
13 matters such as guardianship, but I believe that was
14 more than four years ago.

15 Q. Okay. Have you ever provided expert
16 reports or disclosures for civil cases pending in
17 federal courts before this one?

18 A. To the best of my knowledge, again, all of
19 the other evaluations that I have done are for civil
20 matters in State Court.

21 Q. In the State Court in which you've
22 provided those report, would that be Michigan State
23 Courts?

24 A. Generally, yes.

1 Q. In any of the state courts where you've
2 provided expert disclosures, is it correct, then, that
3 you don't remember testifying in any of those cases?

4 A. A portion of my practice involves
5 independent medical examinations. They are mostly in
6 the context of auto no fault. I have been scheduled
7 for a number of depositions in the last four years,
8 but they have all been cancelled prior to being
9 completed.

10 Q. Okay. And is -- in the disclosures that
11 you wrote or reports in the State Court -- Courts of
12 Michigan or elsewhere, do you ever remember being
13 required to provide a testimony list of depositions
14 and trial testimony?

15 A. I have been asked before if I have been
16 deposed in the last four years and I have not, and so
17 I -- that's the response that I provided there as
18 well.

19 Q. So just to be clear, you don't -- you are
20 not sure if you were required to produce a testimony
21 list in the state courts in which you have testified
22 or have been retained?

23 A. I have -- I was asked once or twice to
24 produce a list, but there is no list because I did not

1 testify.

2 Q. Okay. Gotcha. Thank you.

3 So, then there is no testimony list.

4 Let's look at your invoices. I was provided two
5 invoices.

6 MR. ROGERS: I'll open this first one up and
7 let's mark this one, Juliana, as Exhibit 3.

8 (WHEREUPON, a certain document was
9 marked Mira Krishnan, Ph.D.
10 Deposition Exhibit No. 3, for
11 identification, as of 10/05/2020.)

12 BY MR. ROGERS:

13 Q. Can you see that all right, Doctor?

14 A. Yes.

15 Q. So it's an invoice to Mr. Stern dated
16 June 15th, 2020.

17 There is an amount, flat rate, it looks
18 like \$30,000 for ten neuropsychological evaluations in
19 Flint per contract sent for review on 6/14/20.

20 What -- what is the reference to a
21 contract sent for review?

22 A. I -- I provided -- so I generated a
23 contract. In both of the cases I asked the firms if
24 they have a standard contract that they wanted to use

1 and they agreed to use my contract and so I sent them
2 a contract between my LLC and their LLP.

3 Q. Was that contract executed, signed?

4 A. I believe so.

5 Q. So, do you have it?

6 A. Yes.

7 Q. So will you produce it?

8 A. Yes. I thought it was already produced to
9 you.

10 Q. Yeah, no, I haven't seen it. Is that
11 something that you could maybe at some point during
12 today e-mail to Louise and she could provide it to me,
13 the -- the contracts with -- was there only one or was
14 there -- well, let's put it this way.

15 If you had a contract with Mr. Stern's
16 firm and you had a contract with Mr. Lanciotti's firm,
17 are they the same, the same standard -- your standard
18 agreement?

19 A. The only difference is that when I was
20 first asked to serve Mr. Lanciotti's firm, the -- the
21 scope of the work was slightly unclear. That contract
22 was executed in early May and Michigan was under a
23 stay home court -- pandemic order.

24 The order -- the contract for Napoli, as a

1 result, was on an hourly basis because I was not sure
2 what I would be able to do at the time that it was
3 executed, whereas the contract for Levy Konigsberg is
4 on a flat rate fee basis.

5 Q. Okay. Well, I think we better get the two
6 contracts then. Would you, please, at some point send
7 to Lee wheeze the contract that has been executed for
8 both firms, contracts for both firms, and then
9 we'll -- I'll go ahead and mark those.

10 MR. ROGERS: That's no problem, Louise, is that
11 right?

12 MS. CARO: That's right.

13 MR. ROGERS: Okay. Thank you.

14 BY MR. ROGERS:

15 Q. So, looking at this invoice, Exhibit 3,
16 does that mean basically that your flat rate for
17 during a neuropsychological exam of each individual
18 plaintiff is \$3,000 per plaintiff?

19 A. Correct.

20 Q. All right. And then so that -- and that
21 first one for Mr. Stern was for ten total plaintiffs,
22 and I'm going to show you now, I'll open up the second
23 invoice that I received.

24 MR. ROGERS: We'll mark this as Exhibit 4,

1 please, Juliana, this is dated a couple of days later,
2 the 27th.

3 (WHEREUPON, a certain document was
4 marked Mira Krishnan, Ph.D.
5 Deposition Exhibit No. 4, for
6 identification, as of 10/05/2020.)

7 BY MR. ROGERS:

8 Q. So that was an additional 2500. Was that
9 for one more plaintiff?

10 A. No. What happened was that there were
11 several missed appointments by the plaintiffs and I
12 had to change my schedule significantly and stay in
13 Flint for an extra day and so I requested extra
14 compensation for that.

15 Q. Okay. Were those two invoices paid, the
16 30 and then 2500?

17 A. Yes.

18 Q. Okay. So I see now. The -- so you did --
19 for Mr. -- Mr. Stern you invoiced him for a total of
20 ten neuropsychological evaluations of his ten clients
21 essentially, right?

22 Okay.

23 A. That's correct.

24 Q. Now, have you issued any invoices for work

1 that you have done since the last one here, which is
2 June 27th, 2020?

3 A. To Levy Konigsberg?

4 Q. Sure.

5 A. No, I don't think I have.

6 Q. Have you issued invoices to the Napoli law
7 firm?

8 A. I believe I issued one invoice to the
9 Napoli firm for follow-up phone conversations or
10 meetings.

11 Q. Okay. Well, with respect to these four
12 bellwether plaintiffs that we are referring to,
13 S[PPI], T[PPI], V[PPI] and W[PPI], they are all
14 Mr. Stern's clients, and since the neuropsychological
15 testing that was done and the dates that you issued
16 your reports and the reports were produced to us,
17 you -- you did more work after the invoices were
18 issued, right?

19 A. Will you explain what you mean by "did
20 more work"?

21 Q. Yes. So you -- you -- by the end of June,
22 which was the last invoice, June 27th, the work that
23 you had done up until that time was to do -- review
24 the materials and do the neuropsychological testing

1 and evaluations, right?

2 A. Correct.

3 Q. But then you had to write -- write up the
4 reports, right?

5 A. Oh, I'm sorry. The reports are also
6 included -- the reports are part of the evaluations.

7 Q. That was my question. Okay.

8 So, do you have -- since you charged the
9 flat fee for these, did you record anywhere else the
10 time that you spent actually doing the evaluations,
11 reviewing the materials that had been provided, and
12 then going and -- ahead and writing up the reports, is
13 that itemized or separated out anywhere?

14 A. No, I don't think it is.

15 Q. Would you check, because that would be of
16 interest to me, that is, whether or not you kept any
17 separate time records or calendars or entries that
18 would show how much time you spent reviewing records,
19 how much time you spent doing the evaluations, and
20 then how much time you spent actually writing up the
21 reports?

22 A. I can describe that to you.

23 Q. All right. Why don't you do that.
24 Let's -- let's pick one.

1 Let's pick SPPI [REDACTED] and tell me about that,
2 you know, how much time did you spend reviewing the
3 materials, how much time did you spend doing the
4 actual evaluations and testing, and then how much time
5 you spent doing -- writing up the report?

6 A. For each of these bellwethers, generally
7 speaking, the interview of the parents lasted between
8 one and one and a half hours, the direct
9 neuropsychological evaluation of the child lasted
10 about three hours to four hours, and then the balance
11 of time was approximately five or six hours. That
12 included the records review and the writing of the
13 report.

14 Q. Okay. So all of that work that you just
15 described per plaintiff you billed \$3,000 and then you
16 had to bill an extra 2500 because of just scheduling
17 and missed appointments, right?

18 A. That's correct.

19 Q. So, what is your hourly rate for work that
20 you are being asked to do going forward including for
21 your deposition today?

22 A. \$300 an hour.

23 Q. Did you do any work to prepare for
24 providing deposition testimony today?

1 A. Over the course of Friday and the weekend,
2 I reread the reports that I wrote and I re-reviewed
3 some of the journal articles that are in my reference
4 list.

5 Q. Anything else?

6 A. I had a brief meeting with the law -- law
7 firms Napoli and Levy Konigsberg on Friday.

8 Q. Telephone or Zoom?

9 A. Zoom.

10 Q. How many hours total do you think you
11 spent doing all of that work that you just described?

12 A. Approximately four.

13 Q. In between the time that you finished
14 writing your reports and the time that you spent
15 starting Friday preparing for the deposition, did you
16 do any other work on the case?

17 A. I believe that Mr. Lanciotti called me on
18 two or three occasions and -- and Mr. Stern called me
19 on two or three occasions.

20 Q. And what was the purpose of those phone
21 calls? I don't want you to tell me exactly what was
22 said, but, you know, the basic subject matter or
23 purpose.

24 A. Generally speaking, they provided me an

1 update on the state of the case. I wanted to know
2 when this deposition would happen so that I could make
3 sure that it was blocked off on my calendar and I
4 think we did briefly discuss this issue that was an
5 earlier focus of the deposition with respect to
6 whether I was rendering an opinion on causation.

7 Q. I see. When did the conversation take
8 place about whether you would be rendering opinions on
9 causation, when -- when was that?

10 A. I don't remember exactly. It was sometime
11 in August, I believe.

12 Q. Did that conversation --

13 A. At that time there was no conclusion on
14 the topic.

15 Q. Yeah. Was that -- was there any
16 conversation with the lawyers on that subject on this
17 past Friday?

18 A. I don't think that it was a significant
19 topic of conversation on Friday.

20 Q. Insignificant?

21 A. We met before the -- the hearing that we
22 discussed earlier, the one that you showed me the
23 deposition -- the transcript of, but that hearing I
24 believe had not yet been scheduled or I was not aware

1 that it was going to happen at that time on the
2 morning of Friday.

3 Q. So, but at least part of the subject
4 matter that was discussed on Friday was this issue of
5 whether you would be offering opinions about causation
6 in the case or not, is that right?

7 A. I don't recall, actually, that it came up
8 on Friday. I -- I am not sure.

9 Q. All right. The reason I asked is because
10 you said it wasn't a significant part of the call, so
11 your best memory is now that you're not sure if it
12 came up on Friday or not, is that right?

13 A. Correct.

14 Q. Those materials that we dis -- that you
15 described that were in your files, did you make any
16 separate notes or write up any separate memos of any
17 type concerning the information that was contained in
18 those materials besides your actual report?

19 A. No.

20 Q. Did you -- are those records the way that
21 you have them, are they in electronic form?

22 A. Yes.

23 Q. Did you highlight them or mark them up or
24 edit them or annotate them in any way electronically?

1 A. No.

2 Q. Did you print them out into paper form and
3 make any notes on them or highlight any important
4 sections or anything like that?

5 A. No. In general when I review records, I
6 have the PDF document in one window and the Word
7 document in another and I type directly into my
8 report.

9 Q. Is that what you did with respect to these
10 four reports?

11 A. Yes.

12 Q. The same question, I want to make sure I
13 include this, the deposition transcripts.

14 Is your answer the same with respect to
15 those, that you don't have any separate notes or the
16 transcripts highlighted in any fashion, whether
17 electronic or in paper form?

18 A. I do -- I do not.

19 Q. So, to the extent that you would do any
20 more work on the case after your deposition and then
21 moving toward the trial date, would your rate for
22 those services be \$300 an hour?

23 A. Yes. I believe this is in the contract.

24 I apologize that you have not seen it. The -- my rate

1 for all services up and to and including the
2 evaluation is \$250 an hour and my rate for all
3 services during this -- this day is, up to and
4 including trial, is \$300 an hour.

5 Q. Okay. The next question I have for you is
6 about the scientific literature that you reviewed and
7 relied upon in support of your opinions. Excuse me.

8 You -- you had prepared and attached to
9 your report -- reports a document entitled
10 "Bibliography" or "List of References." I'll just
11 pull that up from one and make sure we know what it
12 is.

13 Okay. I haven't shared my screen yet,
14 have I? You don't see that, do you?

15 MS. CARO: Nope.

16 BY THE WITNESS:

17 A. I do not.

18 Q. How is that, do you see that now?

19 A. Yes.

20 Q. Okay. So this is a -- it's a
21 two-page document. I -- this is the one from the
22 SPP report.

23 Is this, in fact, the List of References
24 or a Bibliography of the scientific literature that

1 you reviewed and relied upon to some extent in forming
2 the opinions that you hold in the case, Doctor?

3 A. Yes, it is.

4 Q. Okay. And I -- I think it's the same for
5 all four plaintiffs.

6 Did -- is that right, is the -- is this
7 Bibliography basically the same for all four?

8 A. What I did was I had pulled all of the
9 references that are in all of the reports and made one
10 list of references. If the reference was used in the
11 report, it is cited in the report using the APA style.

12 Q. Okay. Gotcha.

13 So there is -- there aren't any additional
14 scientific papers or literature that you reviewed and
15 rely -- relied upon other than what's in this
16 bibliography, right?

17 A. Outside of my general expertise, there
18 isn't that I -- there are no other articles I used in
19 formulating these opinions specifically.

20 Q. So we have the reports and we have the --
21 what I would call the underlying data or the
22 neuropsychological evaluations and test report forms
23 for each of the plaintiffs.

24 Are -- have you reviewed or do you have in

1 your possession, in your files, anything else that we
2 haven't talked about relating to these four bellwether
3 plaintiffs?

4 A. I don't think I do.

5 Q. I didn't see in the underlying data
6 materials, at least in some cases, and we can get into
7 this in a little bit more detail later, any examinee
8 or informant response sheets, and I have an
9 understanding that for some of the evaluations you did
10 you're interviewing the parents and for others you
11 were interviewing the plaintiffs.

12 Do I have that right so far?

13 A. So, in general I interviewed the parents
14 together with their children.

15 Q. So are there -- did you have separate
16 response sheets that the parents or the child filled
17 out versus response sheets that you filled out as you
18 were interviewing them?

19 A. Would you explain what you mean by
20 "response sheet," please?

21 Q. Well, I guess I have in mind -- let's do
22 it this way:

23 So when you conducted the interviews of
24 the -- of the parents and the plaintiffs, you had

1 already described that to me where you had your Word
2 document open -- open and you had your computer and as
3 you were asking them questions and they provided
4 responses, you were summarizing that information right
5 in the Word document, right?

6 A. That's correct.

7 Q. So, were there any of the tests or
8 evaluations that you did in which you were asking the
9 parents questions and they were providing answers to
10 you where you were the person completing the sheets
11 with their responses or summarizing what their
12 responses were versus them filling it out?

13 A. There is a test that is used for most of
14 these bellwethers called the Vineland, V-i-i-n-e --
15 V-i-n-e-l-a-n-d dash 3. The Vineland is an adaptive
16 behavior scale. I think this may be what you were
17 referencing.

18 The format of the Vineland is that it is
19 an interview, it is a portion of the interview.
20 General questions are asked by the psychologist of the
21 parent related to their child's abilities. The -- the
22 psychologists make the ultimate determination of the
23 ratings and fills those out. That is done via a
24 web-based interface and it generates the document that

1 you were provided, I believe, which is the report from
2 the Vineland assessment.

3 Q. All right. So, are there any other
4 assessments that you conducted on the bellwether
5 plaintiffs that are of that type like the Vineland
6 where you are asking the respondents, the examinees
7 questions and you are inputting the information or the
8 scaling that goes into the report? Besides the
9 Vineland is what I meant.

10 A. In general, all of the neuropsychological
11 tests involve me asking questions or asking the
12 patients to do things and then writing down responses,
13 and I believe that you were provided those protocol
14 summaries.

15 Q. All right. So, I'm not sure about all --
16 we have the protocol summaries, but I don't think we
17 have the protocols and I don't think we have the --
18 the normative scaling that you used, but we'll get
19 into that in a little bit when we -- when we go
20 through the first one.

21 So I'm just trying to get at this, though.
22 Have -- have you provided to us in the underlying
23 neuropsychological data materials everything that was
24 generated as a result of your interviews and the

1 testing that you actually did?

2 Is there anything else out there that you
3 did not provide?

4 A. I provided Mr. Stern and Mr. Lanciotti
5 everything that I generated.

6 Q. Okay.

7 MR. ROGERS: All right. Why don't we take just
8 a short, short break. I'm going to turn to some
9 different questions about some of these documents now,
10 so let's take a five-minute break. I need a short
11 water and bathroom break.

12 Is that okay with everybody? We'll
13 start --

14 THE WITNESS: Yes.

15 MR. ROGERS: -- start up again 10:35.

16 MS. CARO: Sure.

17 MR. ROGERS: Okay. Let's do that. Off the
18 record.

19 THE VIDEOGRAPHER: Going off the record at
20 10:32 a.m.

21 (WHEREUPON, a recess was had
22 from 10:32 to 10:38 a.m.)

23 THE VIDEOGRAPHER: Back on the record at
24 10:38 a.m.

1 BY MR. ROGERS:

2 Q. Okay. Dr. Krishnan, I wanted to ask you
3 some background questions about your education,
4 employment, experience, that sort of thing.

5 Where did you go to high school?

6 A. I went to high school at West Ottawa High
7 School, O-t-t-a-w-a, in Holland, Michigan.

8 Q. Okay. And what year did you graduate?

9 A. This is a memory test. I graduated in
10 1993.

11 Q. And did you go to college directly out of
12 high school?

13 A. Yes. I went to the University of Michigan
14 and -- for my undergraduate education from 1993 to
15 1997.

16 Q. And what degree did you receive?

17 A. I received a Bachelor of Science and
18 Engineering in engineering physics.

19 Q. Okay. What did you do after that?

20 A. I remained at the University of Michigan
21 for two more years, I worked in a ultrafast optics
22 lab, and I received a master's of science in
23 engineering in nuke -- nuclear engineering.

24 Q. In what year?

1 A. And that was 1999.

2 Q. Okay. So, from 1999 forward, what did you
3 do?

4 A. From 1999 to 2004 I -- 2004, I worked in
5 several capacities as an engineer and consultant. I
6 worked for an organization called Visteon,
7 V-i-s-t-e-o-n, that was at the time part of Ford Motor
8 Company, I worked for Deloitte Consulting,
9 D-e-l-o-i-t-t-e, and I worked for Textron,
10 T-e-x-t-r-o-n, and then during the tail end of that
11 time I also took undergraduate courses and graduate
12 courses in psychology at Wayne State University.

13 Q. So from '99 through 2004, you are basing
14 do -- basically doing engineering work for these
15 companies that you described?

16 A. Correct.

17 Q. And when did you start taking psychology,
18 undergraduate and/or graduate psychology courses?

19 A. I believe that was in 2002.

20 Q. Why did you start doing that?

21 A. I enjoyed problem solving as an engineer,
22 but I wanted something with a more human connection
23 and so I evaluated different kinds of career paths. I
24 thought about going to law school, I was accepted to

1 business school at University of Michigan. I didn't
2 think that those things would make me happy, and so I
3 took some courses to initially, basically, to stay
4 sharp because I knew I wanted to do something else and
5 I really enjoyed psychology and so I took more courses
6 and during that period of time I decided to go back to
7 graduate school.

8 Q. All right. When did you stop working in
9 the engineering field?

10 A. About two months before I started graduate
11 school at the University of Florida.

12 Q. And what year was that?

13 A. That was, I believe, 2004.

14 Q. Were -- were any changes that you made in
15 your employment during that '99 through 2004
16 timeframe, were -- were those all voluntary, that is
17 to say, if you moved from one job to another, a
18 different company, it was all voluntary on your part?

19 A. I was -- my pos -- I was a -- I was laid
20 off on one occasion also.

21 Q. All right. You weren't terminated for
22 cause or fired at any of these jobs, were you?

23 A. No.

24 Q. Okay. So, starting in about 2002 -- I'm

1 sorry. What -- what year did you -- I didn't write it
2 down quickly.

3 What -- what year did you start taking
4 graduate courses in psychology?

5 A. I believe that was 2002.

6 Q. Okay. So, and that was at Wayne -- in
7 Florida, right?

8 A. So, I'm sorry. Let me say that again.

9 I -- while I was working as an engineer, I
10 took courses at Wayne State University, which is in
11 Detroit, Michigan, as evening courses, generally
12 speaking. I began graduate school in Florida in 2004.

13 Q. All right. So you -- did you get an
14 undergraduate degree in psychology at some point?

15 A. No.

16 Q. How was it that you were able to start
17 taking graduate courses in Florida?

18 A. In general the entrance requirements for
19 psychology grad school do not include an undergraduate
20 degree in psychology, but they include foundational
21 material and various areas of psychology and I met all
22 of the requirements in terms of coursework.

23 Q. Okay. What type of -- what was the name
24 of the university in Florida that you attended --

1 attended for your graduate work in psychology?

2 A. The University of Florida.

3 Q. And how long did that program last?

4 A. This requires a small explanation of how
5 psychology graduate school works, but I was enrolled
6 at University of Florida from 2004 to 2009. During
7 the timeframe 2008 to 2009, I was at the University of
8 Chicago doing my internship, but the way that
9 psychology graduate school works, you remain
10 enrolled -- one remains enrolled in their psychology
11 graduate program during their internship. So
12 that's -- that's a normal part of the way that
13 training works.

14 Q. So, did you then receive your graduate
15 degree in psychology in 2009 from the University of
16 Florida?

17 A. Yes, that's correct.

18 Q. And what -- what is that --

19 MR. STERN: Hey, Dave?

20 MR. ROGERS: Yeah.

21 MR. STERN: Dave? This is Corey. I just wanted
22 to interject as a University of Georgia graduate from
23 both undergrad and law school, I'm not sure that we'd
24 be having this deposition if I was fully aware of

1 Dr. Krishnan's educational experience and the fact
2 that she attended Florida.

3 MR. ROGERS: I think --

4 THE WITNESS: Please don't hold that against me.
5 I'm also a Michigan State adjunct and I...

6 MR. ROGERS: I think that Doctor --

7 MR. STERN: I just wanted to put it -- I just
8 wanted to put it -- Dave, I had to put it on the
9 record, and I didn't mean to interrupt you, I know you
10 are in a flow, but my heart is breaking right now and
11 I feel like I had to interject.

12 MR. ROGERS: Well, I -- I think that would be
13 suggestive of a desire, Dr. Krishnan, on Mr. Stern's
14 part to confirm your withdrawal as an expert in the
15 case entirely at this stage.

16 MR. STERN: We are too far along, Dave. We are
17 already -- we are already in the hole.

18 MR. ROGERS: Yeah, okay. Well...

19 MR. STERN: Sorry to interrupt.

20 MR. ROGERS: I thought that might be in the
21 offing with that statement, but I guess we'll proceed
22 along.

23 BY MR. ROGERS:

24 Q. Okay. So just I think I was asking you

1 what -- what was the degree that you received from the
2 University of Florida in 2009?

3 A. That is a Ph.D., a Doctor of Philosophy in
4 clinical psychology.

5 Q. Was -- was there any interim degree, like
6 a master's in psychology, or did you just go right to
7 the Ph.D.?

8 A. I believe I did receive a master's in
9 2006. I did receive a master's in 2006. The reason I
10 say that is because those -- those masters' degrees,
11 you have the option -- one has the option of electing
12 or not electing to receive one, and it is really not
13 something that matters after the doctoral degree is
14 conferred. But I believe that I received one. I
15 didn't attend a graduation, but I did receive the
16 certificate.

17 Q. Okay. So then in 2000 -- let me go back
18 to your training, your -- your internship training in
19 Chicago. Can you describe what -- what that involved?

20 What were you doing?

21 A. So, in general with clinical psychology,
22 clinical psychologists have a large amount of clinical
23 training throughout their graduate education and so I
24 did, I think, on the order of 3 or 4,000 hours of

1 clinical service in Florida. We complete a
2 pre-doctoral internship which is a one-year clinical
3 training experience specializing typically in our
4 practice area. And so I completed a one-year
5 pre-doctoral psychology internship at the University
6 of Chicago in Chicago, Illinois, where I primarily
7 completed adult and child neuropsychological
8 evaluations.

9 I also did child psychotherapy and I was
10 involved in treatment teams as part of that training
11 as well. That training also includes seminars and
12 didactic training and giving presentations and those
13 kinds of things as well.

14 Q. All right. What did you do after you
15 received your Ph.D., what work did you do?

16 A. I completed -- sorry?

17 Q. Go ahead.

18 A. I -- I completed a two-year postdoctoral
19 fellowship in clinical neuropsychology at Mary Free
20 Bed Rehabilitation Hospital in Grand Rapids, Michigan.

21 Q. What type of patients were you involved
22 with there?

23 A. This is a subacute rehabilitation hospital
24 that also offers outpatient services. The primary

1 group of patients I work with there were people who
2 had traumatic brain injuries, but I saw a variety of
3 other people as well.

4 Q. Okay. How long did you do that?

5 A. Two years.

6 Q. So does that bring us up to 2011?

7 A. Correct.

8 Q. What did you do then?

9 A. I accepted a position with a large
10 non-profit, Hope Network, and I was at Hope Network
11 from 2011 into the -- until the beginning of 2016.

12 Q. And what was that?

13 A. Initially I was a staff neuropsychologist
14 at an autism center. From, I believe, 2012 to the end
15 of 2015 I also directed that center.

16 Q. Did you work with exclusively patients who
17 had autism during that time?

18 A. No. So, in general, in my experience when
19 one has a neurodevelopmental clinic, whatever the area
20 of emphasis is, there are a variety of patients in
21 that stream, so I saw children with a variety of
22 neurodevelopmental problems, autism, ADHD, learning
23 disabilities, intellectual disabilities, toxic
24 exposure and so on.

1 Q. Okay. What -- what percent of your work
2 at the center for autism involved working with
3 children who had exposure to toxic chemicals?

4 A. I routinely asked about this for
5 100 percent of my patients. This is not a clinic that
6 sought out children in this area, although a number of
7 them were referred. I would estimate that it would be
8 about 1 to 3 percent over the course of those five
9 years.

10 Q. When you said, I wanted to make sure I
11 heard you correctly, did you say when you are
12 typically asked about this or did you mean that you
13 typically -- typically ask about toxic chemical
14 exposure when you are evaluating patients, which --
15 which was it?

16 A. I typically ask about toxic exposure.

17 Q. I see. So that's a, sort of a general
18 standard history that you take when you are working
19 with the patient and doing a neuropsychological
20 evaluation, you ask about that.

21 Is that what you are saying?

22 A. For children, yes.

23 Q. Okay. All right. And then from 2000 -- I
24 think you said 2016, but this -- your CV says that it

1 was in 2015, but be that as it may, you started a
2 business called Mira Krishnan LLC.

3 What's that?

4 A. So that is my private practice. My
5 private practice consists of clinical services and I
6 also do some consulting services as well.

7 Q. Clinical services, describe what kind of
8 clinical services you have performed since 2015.

9 A. All -- essentially all of my clinical
10 services -- well, since 2015, I did some clinical
11 services that involved psychological evaluations. I
12 have done a little behavior planning and then
13 primarily the -- the bulk of my clinical services are
14 neuropsychological evaluations.

15 Q. Do you -- do you, as part of your clinical
16 practice perform what I would describe as treatment as
17 opposed to evaluations only?

18 A. I am involved in settings where I don't
19 provide direct treatment, but I oversee treatment or I
20 make treatment recommendations or I follow up on the
21 benefit or lack of benefit of treatment. I have
22 performed psychotherapy in the past, but it has been a
23 number of years since I have been a psychotherapist.

24 Q. All right. In terms of your practice at

1 Mira Krishnan LLC, I think you mentioned consulting
2 work.

3 What -- what's the percentage of clinical
4 work that you do with patients versus consulting work?

5 A. It's approximately two-thirds to
6 three-quarters clinical work. I typically see
7 patients three or four days a week.

8 Q. And -- and so for the one-third to
9 25 percent consulting work, tell me about that, what
10 does -- what does that involve?

11 A. I am a psychological consultant in -- for
12 Disability Determination Services, which is the state
13 agency that evaluates Social Security claims, and then
14 I do some clinical work -- I do some consulting work
15 in the form of working with organizations trying to
16 increase their services for minority populations, and
17 I do some public speaking.

18 Q. What percentage of your consulting work
19 involves consulting with lawyers and litigation?

20 A. So, I do -- maybe I'm characterizing
21 things or classifying things in a different way than
22 you. I see -- as a routine part of my work I see
23 evaluations at the direction of lawyers. Some of them
24 are independent medical examinations and sometimes

1 that's not exactly the right term to use.

2 Psychologists tend to call this forensic psychology,
3 and that's a minority of my work. I probably see on
4 the order of four to six cases a month in that area.

5 Q. Yeah, I -- I hesitated to use that term
6 "forensic psychology," but since you used it, would
7 you define what that means to you?

8 Is that -- well, I'll define it. Is
9 that -- forensic psychology is where you are doing
10 work evaluating patients for purposes of some type of
11 litigation, whether it be criminal or civil or
12 disability evaluation, that type of thing?

13 A. Yeah. So I -- I generally use the term if
14 a -- if an attorney asks me to do the work rather than
15 it being a medical referral.

16 Q. Okay. So what percentage of your work
17 involves that, evaluating patients or individuals at
18 the request of lawyers?

19 A. It is probably about 25 to 30 percent.

20 Q. So is that --

21 A. It is a minority of my work.

22 Q. Is that 25 to 30 percent of your
23 consulting work or 25 to 30 percent of your overall
24 work?

1 A. Of my overall work.

2 Q. Including your clinical practice?

3 A. Correct.

4 Q. And for that forensic work that you do the
5 25 to 30 percent, does that include the four to six
6 individuals or evaluations that you do per month that
7 you had told me about earlier?

8 A. That is essentially the -- that's the
9 forensic work that I do.

10 Q. Okay. And is your rate for that work that
11 you do the same as it is here, \$300 an hour?

12 A. I had mentioned previously that it is \$250
13 an hour for evaluations and so that is typically the
14 rate. I do also -- I am sometimes asked to do that
15 work on a flat rate basis, and so I have flat rate
16 fees as well that are similar to the rates that I
17 charge here.

18 Q. Do you know -- or do you have a breakdown
19 of how much of that 25 to 30 percent forensic work
20 that you do for lawyers, how much is for lawyers
21 representing plaintiffs versus lawyers representing
22 defendants?

23 A. That's a little complicated for me as a
24 psychologist because the majority of the work that I

1 do is civil and so typically the -- the injured party
2 is the -- the plaintiff, but in the -- obviously in
3 the criminal side oftentimes the injured party is
4 actually the defendant.

5 When it comes to civil work, I don't track
6 that directly, but the majority -- more than
7 50 percent of the civil work that I do is at the
8 request of defendants. But I -- I work for defendants
9 and plaintiffs.

10 Q. Going back to your retention in this case,
11 do you -- did you learn from the Napoli law firm how
12 they came to retain you, that is, was it a referral,
13 did they -- how did that happen? Did they explain how
14 they came to you?

15 A. Prior to being contacted by Napoli, I was
16 contacted by an organization called the Expert
17 Institute, with which I had not had prior dealings,
18 and they asked me if I was willing to speak to an
19 attorney looking to retain a psychologist for this
20 purpose, and they arranged the phone -- the first
21 phone conversation I had with the Napoli law firm.

22 Q. Tell me about that, what is the Expert
23 Institute?

24 A. I am not very familiar with that. I -- I

1 had -- I looked it up online when they reached out to
2 me, but they appeared to be an organization that
3 identifies experts and connects them to attorneys.

4 Q. Did -- is -- was there any fees exchanged,
5 that is, you know, when they contacted you, did -- did
6 they pay you a fee or anything like that, did any fees
7 exchange hands there?

8 A. I do not have a financial relationship
9 with the Expert Institute.

10 Q. Well --

11 A. I am not sure what the relationship is
12 between Napoli and the Expert Institute.

13 Q. Right. Okay.

14 So, the phone call that you received from
15 the Expert Institute, they would have explained in
16 that phone call that they had a lawyer who was seeking
17 expert -- an expert with expertise in a certain area
18 and they asked you if you'd be willing to serve in
19 that capacity, essentially?

20 A. Correct.

21 Q. Okay. But no money exchanged hands
22 between you and the Expert Institute for your having
23 agreed to work with the lawyers, right?

24 A. That's correct.

1 Q. Has the Expert Institute, since the -- you
2 were retained in this case, referred you to -- or
3 referred other lawyers to you?

4 A. No.

5 Q. Zero?

6 A. Yes, I haven't -- I don't believe that
7 I've had any further contact with the Expert
8 Institute.

9 Q. Do you -- are there any other expert
10 refer -- referral organizations of that type that you
11 have a relationship with?

12 A. So, when I evaluate -- so, a significant
13 portion of my forensic psychology or independent
14 medical examinations are in relation to auto accident
15 injuries, and the -- most of that work is done through
16 companies that maintain referral networks for
17 independent medical examinations. In those cases
18 typically the -- the financial relationship is between
19 myself and that -- that company that does the
20 scheduling of the IMEs.

21 Q. I see.

22 Are those insurance companies or some
23 other entities?

24 A. They are -- they are not insurance

1 companies. So typically these companies maintain
2 ex -- maintain independent medical examination experts
3 in different areas, physical medicine and neurosurgery
4 and pain medicine and psychology and so on. They
5 handle referrals. These referrals come from a mixture
6 of attorneys and insurance agencies.

7 Q. I see that you have on your CV, you are
8 listed as a Clinical Assistant Professor at the
9 Department of Psychiatry in Michigan State University
10 2014.

11 Does that continue, you are still an
12 assistant professor?

13 A. I am currently an assistant professor at
14 Michigan State. Earlier this year my assistant
15 professorship was terminated, I believe, because a
16 form was not submitted in a timely basis and it -- so
17 it ended on 6/30/20 and then it was reinstated I think
18 in late September.

19 Q. Do you teach any classes presently for
20 Michigan State?

21 A. I am involved in medical resident
22 education. I practice in a clinic that has Michigan
23 State interns and residents in it.

24 Q. I see. What -- what clinic is that?

1 A. It's an autism evaluation center that is
2 operated by Hope Network in East Lansing.

3 Q. All right. And I see in your CV here that
4 you have an address listed as 2626 Brooklyn Ave.,
5 Southeast in Grand Rapids, Michigan.

6 Is that the office that you are in now?

7 A. Yes. That's my home, actually.

8 Q. Oh, okay. I -- I meant -- when I said
9 now, I meant actually during the deposition today, are
10 you in your home office now?

11 A. I am in my home office.

12 Q. All right. Is that where you see your
13 patients, your clinic -- in your clinical practice at
14 your home?

15 A. No. So, I have -- I have an office in --
16 in the Grand Rapids area and then I also see patients
17 at -- at sites of -- I -- I maintain contracts with --
18 with Hope Network and I see Hope Network's patients at
19 their sites.

20 Q. Where did you conduct your evaluations and
21 interviews of the bellwether plaintiffs in this case?

22 A. With respect to the four bellwethers that
23 we are currently discussing, I conducted all of those
24 evaluations at a Napoli law office that is in Flint,

1 Michigan.

2 Q. I see. And so if 2626 Brooklyn Ave.
3 is -- in Grand Rapids is your home address, you
4 mentioned an office.

5 Where do you maintain a professional
6 office?

7 A. That address is 4320 44th Street
8 Southwest, Grand Rapids, Michigan 49418.

9 Q. And is there any particular reason why you
10 conducted your interviews of the bellwether plaintiffs
11 and their parents and the evaluations and testing at
12 the Nap -- Napoli law firm office as opposed to your
13 professional office?

14 A. Yes. My professional office is about
15 120 miles away from the patients.

16 Q. I see.

17 A. The -- the bellwethers.

18 Q. Okay. So you -- remind me. I -- I don't
19 know if you said this. Where was the Napoli law firm
20 office located, what city?

21 A. Flint, Michigan.

22 Q. I see. So you traveled 120 miles between
23 where you live and -- and Flint in order to do the --
24 all of the evaluations of the four bellwethers, is

1 that right?

2 A. Yes, that's correct.

3 Q. I'm trying to get some background or a
4 description from you about the extent to which your
5 practice involves evaluating children versus adults,
6 and let's pick an age.

7 What would you consider it to be, you
8 know, the end of childhood age and then moving into
9 adulthood so that we can classify this?

10 A. It's a sliding scale because there is a
11 lot of overlap between adult and child neuropsychology
12 for young adults, but typically neuropsychologists and
13 I typically consider people under 18 to be children
14 and people above 18 to be adults.

15 Q. Okay. So do you -- in your clinical
16 practice, do you see children ages, you know, 0
17 through -- well, more than 0 through 18?

18 A. I typically don't see children younger
19 than one year old, but I see children from age 1 to
20 18.

21 Q. Yeah. Okay. And, so, what percentage of
22 your practice involves -- your clinical practice
23 involves children 1 through 18 versus adults?

24 A. I would estimate that about 60 percent of

1 my practice, 60 to 70 percent of my practice is
2 children and then 30 to 40 percent of my practice is
3 adults.

4 Q. I think the oldest child in this case, the
5 bellwethers, is 11, if I'm not mistaken, one I think
6 shortly to be 12.

7 What percentage of your practice
8 involves -- clinical practice, that is, involves
9 children ages 2 to 11?

10 A. So I -- I'm not sure I have an exact
11 estimate, but I can -- I don't have an exact number,
12 but I can estimate. So I -- I believe I just said
13 that 60 to 70 percent of my child population is -- or
14 my patient population is children. The majority of
15 those children are between about 2 and 12 or 13 years
16 of age.

17 Q. Okay. So how many of those -- or how
18 often, I'll ask it this way: How often is it that you
19 evaluate children who for neuropsychological
20 impairment or -- or disabilities, what's the right
21 word, let's get our definitions straight.

22 So when you are talking about the work
23 that you do, if I were to refer to impairments or
24 deficits, is that a correct term that when you do your

1 testing and evaluation you are trying to evaluate
2 whether or not a certain child, in this case patient,
3 has neurological deficits or impairments?

4 Is that the right way to describe it?

5 A. Yeah, I think -- I think that use of
6 either of those terms is fine.

7 Q. Okay. So when is it that you -- do you
8 have a specialty in neuropsychology as opposed to
9 psychology in general?

10 A. Yes. I am board certified in clinical
11 neuropsychology.

12 Q. Yeah, I don't think I asked you about
13 that.

14 When did you get your board certification
15 in neuropsychology?

16 A. I believe that was 2013.

17 Q. So what's the difference between
18 psychology and the specialty of neuropsychology?

19 A. So, psychology, broadly speaking, is the
20 science that deals with the behavior of humans.
21 Clinical psychology is a subset of psychology that
22 applies psychological concepts for healthcare purposes
23 or -- or clinical purposes that may include assessment
24 and treatment.

1 Clinical neuropsychology is a
2 subspecial -- or is a subspecialty of clinical
3 psychology. The expertise, the way that I described
4 this to patients is that neuropsychologists are a type
5 of doctor who use tests of thinking skills to
6 understand how, in the case of children, how
7 children's brains are developing, to understand
8 reasons why they are having problems, whether that be
9 a developmental basis or an injury basis, and to help
10 with things like treatment planning and, in general,
11 how to make life better or easier for them.

12 So neuropsychologists are -- are
13 psychologists who use tests of cognitive and emotional
14 functioning, based on understanding of brain
15 structures and locations, and how different skills are
16 mediated by different parts or different systems in
17 the brain.

18 Q. To what extent does your practice involve
19 conducting neuropsychological evaluations and testing
20 on children who have been exposed or are thought to
21 have been exposed to lead?

22 A. It is a minority of my evaluations, but as
23 I mentioned, approximately 1 to 3 percent of the
24 children that I see in my developmental clinics have

1 had exposure.

2 Q. I see. And when you say 1 to 3 percent of
3 the children that you see in your clinics have had
4 exposure, how do you -- how do you quantify that?

5 What do you mean by "have had exposure"?

6 A. Meaning they have positive lead levels in
7 their medical records, typically, or their parents
8 report it.

9 Q. And -- and would that be in the medical
10 records the evidence that there had been -- they had
11 been exposed to lead, in what form would that evidence
12 be in the medical records for the -- for the patients
13 that you see?

14 A. So in general terms, I -- we are not
15 talking about a specific patient here, but typically
16 the same kinds of evidence that are in these cases,
17 most commonly capillary and venous blood draws.

18 Q. Have you ever seen patients in your
19 clinical practice who've had bone scans done for the
20 evaluation of lead in the bones before?

21 A. I -- I can say that I don't commonly
22 receive bone scan information. I have -- I've seen it
23 before.

24 Q. All right. From -- without naming the

1 patients, I don't want to know about that, but from
2 what sources have you received bone scan lead
3 information before this case, from what entities or
4 what places or people?

5 A. So in clinical practice, generally this
6 information would come from a primary care physician
7 or pediatrician.

8 Q. Okay. So, pediatricians or general
9 practitioners, to my understanding, don't conduct
10 scans of bone for lead, is -- am I right about that?

11 A. I probably -- I'm not an expert who can
12 testify to the scope of practice of pediatricians.

13 Q. Okay. So what I'm saying, though, is that
14 when you -- you said that you did receive information
15 sometimes for some of your patients, occasionally that
16 would be bone scans for lead, and that you would
17 receive that information from general practitioners or
18 pediatricians.

19 Am I right so far?

20 A. I don't -- I don't have specific memories.
21 In the scientific literature there is a mixture of
22 report of bone and blood levels. I -- I think I may
23 have received a bone level from a pediatrician. If
24 I -- if I would have received one, it would probably

1 have been from a pediatrician.

2 Q. Okay. But the -- the -- leaving aside
3 from whom it was received, your experience, can you
4 describe your experience with any entities who
5 actually did the bone scans for lead content besides
6 the person who did them in this case, Dr. Specht?

7 A. I don't have experience in testing
8 directly for lead.

9 Q. No, but, I mean, did -- do you know the --
10 the -- if you have received reports of bone scans for
11 lead before, do you remember the names of the entities
12 or the people who actually did the bone scans besides
13 Dr. Specht?

14 A. I do not.

15 Q. Okay. I think you said -- I may have
16 heard you correct -- mis -- incorrectly.

17 You don't consider yourself to be an
18 expert or have expertise in the field of bone scanning
19 for lead, right?

20 A. That's not generally something that
21 neuropsychologists do, and -- and, no, I don't -- I --
22 I would not know how to complete a bone lead scan.

23 Q. And -- and you don't have any expertise in
24 interpreting the results of bone scans for lead, do

1 you?

2 A. So, in general, assuming that the
3 information from any kind of lead test is accurate,
4 neuropsychologists base their work on field data. And
5 field data of children in the references that I have
6 provided to you, I believe that one of those
7 references uses blood -- bone lead levels as a marker
8 for -- for -- as a marker for in considering children
9 who have cognitive changes.

10 Q. Would you point out which one to me that
11 is, please, because I would like to make sure I don't
12 forget to have you tell me which one. So I have
13 your -- do you have your Bibliography reference chart
14 handy that you could point out which one you are
15 referring to?

16 A. I don't, and I would have to review to
17 make sure I know which one it is. But what I can say
18 in a general way is that the literature, the
19 scientific literature that talks about lead talks
20 about bone and blood levels.

21 Q. Okay. I -- I can share my screen and I'll
22 show you the -- the Bibliography references here and
23 see if you can identify which one you are referring
24 to.

1 Can you see that screen?

2 A. Yes.

3 Q. Okay. So, I think I have included all of
4 them here by date. Actually, the -- the way I have
5 them is basically I think the way that you labeled
6 them, but do you recognize which one you are referring
7 to?

8 A. So I -- I don't have all of these articles
9 open in front of me, but I believe that the Hou, et
10 al. article talks about bone lead levels, but, again,
11 I -- I'm not looking at it right now, so I'm not sure.

12 Q. This is the one I've highlighted here,
13 2013 Hou?

14 A. Correct.

15 Q. Okay. Any others?

16 A. I -- I am not sure.

17 Q. All right. But I guess to close this out,
18 the, the -- the evaluation or interpretation about
19 what a particular result from a bone scan for lead
20 content means, you don't have expertise in that, do
21 you?

22 A. My expertise would really run up to the
23 point that in prior studies of cognitive functioning
24 researchers may categorize children based on high or

1 low levels of lead or medium levels of lead. And so
2 we know -- we know -- we use those categorizations,
3 you know, in considering, like, for instance, are --
4 are there children with these kinds of levels of lead
5 that have cognitive impairments.

6 So there is all kinds of things that I
7 don't know how to do myself, but I use that data in
8 making my evaluation, much like pediatricians refer
9 people to neuropsychologists, they don't know how to
10 do neuropsychological evaluations, but they use the
11 results that the neuropsychologist provides, so that
12 goes the other way as well.

13 Q. Okay. With respect to the blood lead
14 levels that you talked about for the patients that you
15 see, the minority of about 1 to 3 percent of your
16 patients who may have had some lead exposure, what are
17 the -- to what extent do you have a baseline level for
18 blood lead levels for making an evaluation of lead
19 exposure as being a cause of any of the
20 neuropsychological impairments that you are seeing?

21 A. I'm sorry. I'm not sure I understand your
22 question.

23 Q. Well, what -- do you in the patients that
24 you see when you -- what is the purpose of you

1 receiving information about blood lead levels from
2 those patients or about those patients?

3 A. So, generally, these children are referred
4 by pediatrics for evaluation and the goal of the
5 evaluation is typically differential diagnosis,
6 meaning explaining, first of all, if there is a
7 problem and -- and what of multiple causes might
8 explain the problem. You know, like do they have
9 ADHD, do they have a problem that might have been
10 caused by lead, do they have autism, do they have
11 something else.

12 Q. So the purpose of receiving the blood lead
13 levels is in part -- is part of the process of
14 arriving at a differential diagnosis, is that right?

15 A. Correct.

16 Q. And what -- what do you mean by the term
17 "differential diagnosis"?

18 A. When I say "diagnosis," I mean providing
19 medical explanation for a problem. When I say
20 "differential diagnosis," I mean that the problem --
21 the presence of a problem has been established and the
22 question is not if there is a diagnosis but what the
23 diagnosis is.

24 So like if --

1 Q. So is -- is part of -- go ahead.

2 A. Sorry.

3 So, like, if -- if a doctor sent you to me
4 and they wanted to know are you depressed, that is a
5 diagnosis. If they want to know are you depressed or
6 do you have problems because you had a concussion,
7 that is a differential diagnosis.

8 Q. Did you perform differential diagnoses on
9 the four bellwether children in this case?

10 A. In practice it's always differential
11 diagnosis in my experience, but what's different about
12 an examination like this is that these children are
13 part of a lawsuit, I guess, that, based on the nature
14 of -- of their having been referred, they are alleging
15 that something is wrong, but I am also trying to ask
16 whether anything is wrong at all. So I really am
17 doing both things.

18 Q. Okay. So this -- this goes to the issue
19 of the causation that we I think talked about some two
20 plus hours ago now.

21 So, does arriving at a diagnosis require
22 consideration of differential diagnoses and then
23 ruling some out and then arriving at a final
24 diagnosis?

1 A. In general, yes.

2 Q. And so did you reach a diagnosis of the
3 four bellwether children in this case that includes
4 not only what is the psychological --
5 neuropsychological impairment or deficits that the
6 children have, but also what was the cause -- what is
7 the cause of the deficits?

8 MS. CARO: Object to form.

9 BY THE WITNESS:

10 A. I believe that question is answered in my
11 reports.

12 BY MR. ROGERS:

13 Q. Well, what is it? What's the answer?

14 A. So, there is a Diagnosis section in each
15 of the reports that contains the diagnosis.

16 Q. Right. So let me just read one of them to
17 you. It's for EPPI SPPI [REDACTED].

18 The -- do you have the reports handy so
19 you can check to make sure I have it right?

20 A. I would be glad to look at it on screen if
21 you'd like to put it on screen.

22 Q. Okay. Maybe when we take our lunch break
23 it might be useful if you have -- do you have that
24 separate computer with your reports handy so that you

1 could have it up on screen too because I have a paper
2 copy and it might be -- it is just going to be more
3 time-consuming for me to keep bringing them up on
4 screen.

5 Is that something that you could do when
6 we take our lunch break?

7 MS. CARO: Well, wouldn't it be easier for
8 everybody in the depo if we could get up on screen
9 what we are talking about, are you going -- especially
10 since you are probably going to want to mark some of
11 these?

12 MR. ROGERS: Maybe, but I'm just asking if the
13 doctor has them handy.

14 BY THE WITNESS:

15 A. Typically in my prior experience in
16 depositions I'm asked not to bring things with me.
17 This is obviously an unusual circumstance. I -- I
18 agree that it would be easier if you put the same
19 document on screen so that we were all talking about
20 the same thing.

21 BY MR. ROGERS:

22 Q. It is on the screen now. We won't mark it
23 as an exhibit yet because I want to go through these
24 in a -- in a particular order.

1 Can you see what's on my screen now?

2 A. I cannot.

3 Q. Hmm.

4 THE VIDEOGRAPHER: You just need to share,
5 David.

6 MR. ROGERS: Yeah, I -- I thought I did. How is
7 that?

8 BY THE WITNESS:

9 A. It appears to be starting to share now.

10 Okay. Yes, I do.

11 BY MR. ROGERS:

12 Q. So this is your report on EPP1 SPPI and
13 it says under Diagnoses: "Overall, my primary
14 diagnostic impression is ADHD," and you have a code
15 there. So let's stop there.

16 Is that code from the DSM-V?

17 A. It's from the ICD-10.

18 Q. Okay. Is the --

19 A. It is -- the codes in the DSM-V and the
20 ICD-10 are the same.

21 Q. So, but the ICD-10, the coding that is
22 used, does that have the diagnostic criteria or does
23 the DSM-V have the diagnostic criteria?

24 A. The DSM-V has the diagnostic criteria

1 generally speaking.

2 Q. Okay. So with respect to a diagnosis that
3 you made for the SPPI patient of ADHD -- well, let
4 me ask you.

5 You say here: "My primary diagnostic
6 impression is ADHD."

7 Is that different than a diagnosis?

8 A. No.

9 Q. So you made, based on your testing, a
10 diagnosis that EPPI SPPI has ADHD, right?

11 A. Yes.

12 Q. And do you hold that diagnosis as an
13 opinion to a reasonable degree of probability in the
14 field of neuropsychology?

15 A. I am not sure I understand the question.

16 Q. Hmm. Well, what --

17 A. ADHD is the diagnosis that I made in the
18 report and -- and I stand by the report.

19 Q. Yeah. So that's an opinion -- a diagnosis
20 is an opinion, right?

21 A. Correct.

22 Q. So in your opinion, EPPI SPPI has ADHD,
23 right?

24 A. He has -- yes, he has signs and symptoms

1 that are consistent with ADHD.

2 Q. So I guess my question is: Do you hold
3 that diagnosis or that opinion that he has ADHD to a
4 reasonable degree of probability in the field of
5 neuropsychology?

6 A. Yes, I do.

7 Q. All right. Now, and then with respect to
8 the diagnostic criteria that would form the basis for
9 the diagnosis of ADHD, that comes from the DSM-V,
10 right?

11 A. So, in general the DSM-V is considered
12 the -- the diagnostic standard in the United States.
13 We look at a variety of sources of evidence. The
14 field -- the fields of medicine and psychology
15 don't -- are not static and so development of
16 psychological knowledge didn't stop in, I believe,
17 2013 when the DSM-V was published. I generally follow
18 the literature on ADHD, but the symptoms are
19 consistent with those described in -- in the DSM-V.

20 Q. Did you use the DSM-V as the diagnostic
21 criteria to formulate this diagnosis for SPPI [REDACTED]?

22 A. I -- so, this is also -- this has been a
23 sticky issue in the field of psychology and psychiatry
24 since the DSM-V. Prior to the DSM-V there was fairly

1 broad agreement on using the exact diagnostic
2 standards in the DSM with the DSM-IV. There was a
3 significant departure from that with the publication
4 of the DSM-V. Generally speaking I make ICD
5 diagnoses. I use the DSM-V as a guide -- as a
6 guidance.

7 Q. But what's the difference between the
8 ICD-10 F90 diagnostic criteria versus the DSM-V
9 diagnostic criteria for ADHD, if there is any?

10 A. So, in general, I consider what the DSM
11 says, but I also consider what the general scientific
12 literature since then has said.

13 Q. Okay. I -- I think I understand what you
14 are saying, but let's just be clear.

15 So the ICD-10 does not contain diagnostic
16 criteria, correct?

17 A. No, that -- I believe that's correct.

18 Q. So now this next part of your diagnosis
19 for S[PPI] here that's up on the screen: "...ADHD,
20 which is more likely than not a result of
21 developmental lead exposure."

22 Is that an opinion that you hold to a
23 reasonable degree of probability in this case?

24 A. Yes, it is.

1 Q. So hence, the questions that I had at the
2 beginning of the deposition about causation, isn't
3 that a causation opinion?

4 MS. CARO: Well, let me interrupt. We discussed
5 our use of the testimony in this case at trial. That
6 doesn't mean that she did not have an opinion about
7 the -- a diagnosis. We are not using that -- or not
8 offering that at trial. So, I mean, that's why Corey
9 said you can ask all of the questions you want about
10 all of this, but that doesn't mean that we are
11 offering it at trial.

12 MR. ROGERS: Well, I just -- I just want it to
13 be clear on the record then that -- you know, so, the
14 plaintiffs are not going to at the trial of this case
15 have Dr. Krishnan offer an opinion that EPP1 SPPI
16 ADHD is more likely than not the result of
17 developmental lead exposure, is that right?

18 MS. CARO: That's correct.

19 MR. STERN: Dave -- Dave, I'm not sure why you
20 are trying to lock us into this. It is -- it is not
21 appropriate. The conversation with the Court on
22 Friday about causation was in response to Michael
23 Pitt's claim that the doctors in this case may be
24 talking about general causation for all people in

1 Flint and they needed to be able to protect their
2 clients' interests and everything I said was in
3 response to that.

4 Earlier today I said that she can testify
5 to everything that's in her report, but as of now it's
6 not our intention to offer her as an expert on
7 causation. I don't know what's going to happen
8 between now and then. It is in her report. Just ask
9 her about it. Pretend that she is going to. I'm
10 telling you more than I need to or more than I should,
11 a strategy for plaintiff's counsel is that she is not
12 being offered for causation at trial. There is
13 another expert for that. But that in and of itself
14 doesn't invalidate the opinions that she has in her
15 report, and when you ask a question, like, Well, isn't
16 that causation, which we talked about earlier you
17 weren't going to testify to, she also said that on
18 Friday was the first time that she even had a
19 conversation about this issue which came before the
20 hearing.

21 So it feels a little bit like you are
22 trying to lock her and lock us into things and no one
23 is preventing you from asking these questions. You
24 have her for two days. And many of the defendants who

1 may have been on this deposition have fallen by the
2 wayside in some form or fashion because they've done
3 the right thing and -- and they've -- they are paying
4 \$600 million to settle the case.

5 So, you have all of the time in the world
6 with her. I'm not going to permit you to lock us or
7 lock her in. I stand by the comments that I made this
8 morning. I stand by the comments I made to the Court.
9 But you've done enough of these cases to know that
10 things change. It's in her report. And I don't think
11 it's right for you to -- to either try and beat her up
12 now about not being a causation expert or at trial by,
13 you know, if she -- if she -- if she reads from her
14 report and it gets into something that has to do with
15 causation, you saying, You are not a causation expert,
16 your layer said you are not a causation expert.
17 You've got her. It is an expert deposition. Ask her
18 all of the causation questions you want.

19 BY MR. ROGERS:

20 Q. Dr. Krishnan, I'm going to ask you some
21 general questions now instead of going to any
22 particular documents.

23 MR. ROGERS: And then I think what we should do,
24 it is about 11:30, let's go -- how -- how does

1 everyone feel about a lunch break? Do you want to
2 press ahead until 12:30 and then we can take a break
3 from 12:30 to 1:00? How does that sound?

4 MS. CARO: I'm fine with whatever the doctor
5 wants to do.

6 THE WITNESS: That's fine by me also.

7 MR. ROGERS: Yeah. That's what we'll do. So
8 we'll go to 12:30.

9 BY MR. ROGERS:

10 Q. I'm going to ask you some general
11 questions first.

12 What are the major sources of lead
13 exposure leading to ingestion of -- in children in
14 urban environment such as Flint?

15 A. The urban environment of Flint or urban
16 environments in general?

17 Q. I was using Flint as an example because
18 that's where these plaintiffs reside or resided at the
19 relevant time, but urban environment is fine.

20 A. So, the reason I ask is because as is
21 discussed in one of the references I provided from
22 Dr. Hanna-Attisha's work, there were significant
23 increases in the number of children testing positive
24 for lead in the Flint area that are attributed to

1 water, but a few of the major causes of lead exposure
2 include a water-based lead exposure and lead-based
3 paint, either lead-based paint in the home or
4 sometimes lead-based paint in -- in other home goods,
5 like toys.

6 Q. How about soil?

7 A. Soil can also contain lead. In a clinical
8 setting, you know, with younger children we ask about
9 things like pica or in -- p-i-c-a -- ingesting
10 non-food objects, typically we ask, like, we ask these
11 questions with preschoolers.

12 Q. Right. So do you agree that the primary
13 sources of lead exposure leading to ingestion in
14 children in urban environments would be paint, soil,
15 dust and water?

16 A. I don't know if that order is correct, but
17 I think that those are common sources of in -- of lead
18 exposure.

19 Q. So how do you measure the contributions of
20 each one of those to any particular child?

21 A. I -- I think I have already established
22 that I am not in -- in the profession or business of
23 measuring lead. If you are asking how, as a
24 neuropsychologist, I consider exposure, I look at time

1 course and levels. So if there has been a change in
2 lead level, I look -- I look at things that fit the
3 time in which that change occurred.

4 Q. Hmm. Okay. So have you undertaken an
5 analysis yourself to determine the extent to which
6 paint, soil, dust or water contributed to the lead
7 levels in each of these individual bellwether
8 children?

9 A. I haven't completed any evaluation other
10 than the ones that I have complete -- that I -- the
11 reports that you have received. With respect to those
12 reports, I believe in most of these cases one of
13 your -- one of the attorneys -- one or more of the
14 attorneys questioned the families with respect to
15 things like the paint in their homes. That was in
16 most if not all of these cases. I -- I looked at the
17 blood lead levels that were available to me and/or
18 bone lead levels that were available to me. I used
19 the data that I was provided.

20 Q. Right. But what I'm saying is: Did you
21 do an analysis to determine the extent to which paint,
22 soil, dust or water contributed to the blood lead
23 levels that were recorded in these individual
24 plaintiffs?

1 A. I'm not aware of any of these cases in
2 which there is -- was any evidence of paint or soil or
3 dust exposure to lead.

4 Q. Have you seen the house inspection report
5 for the S[PPI] family residence?

6 A. I don't believe I have seen a house -- any
7 house inspection rec -- re -- reports.

8 Q. Did you, as part of your evaluation in the
9 case, determine the period of time during which these
10 individual plaintiffs were drinking water after the
11 switchover to the Flint River in April 2014?

12 A. I primarily referenced the information
13 that was in the deposition transcripts.

14 Q. Right. So, with respect -- I want to ask
15 you a few questions about these in particular.

16 So, with respect to Mr. -- or E[PPI]
17 S[PPI], you have an understanding and you have as a
18 fact that you have evaluated the fact that E[PPI]
19 S[PPI] stopped drinking the water sometime in 2014.

20 That's on Page 3 of your report, is that
21 right?

22 A. I -- I don't have the -- the document --
23 source documents in front of me, but I stand by what
24 is in my report.

1 Q. Okay. So on Page 3 of your report for
2 SPPI, you report that the family indicated that
3 they stopped drinking the water when they received the
4 letter sometime in 2014, is that right?

5 A. I -- I am going -- I am taking your word
6 for it.

7 MS. CARO: Do you want to put the report up on
8 the screen?

9 MR. ROGERS: Not at this time.

10 BY MR. ROGERS:

11 Q. With respect to the plaintiff TPPI, what
12 is your assumption about whether -- at what point in
13 time, if any, the TPPI family stopped drinking the
14 water after the switchover?

15 A. I would have to go back and look at the
16 specifics in the report. I -- I have not memorized
17 that information.

18 Q. Okay. Yeah, we are going to need to have
19 your reports. And, you know, I think the best
20 procedure is for you to have them with you. You are
21 required to have your file materials with you during
22 the deposition.

23 So, is there a way, like I described
24 earlier, that you could have your reports on your

1 laptop and you can look at them while we go through
2 this?

3 MS. CARO: It seems unusual to me. In every
4 dep -- Zoom deposition I have been in the documents
5 have been placed on the screen for sharing by the
6 attorney and that's what I expected would be happening
7 today.

8 MR. ROGERS: Yeah, but we've already been
9 through this where, you know, the doctor has access to
10 a computer where she can just bring up the report and
11 it will just be easier to do it that way.

12 BY MR. ROGERS:

13 Q. So, can you go ahead and do that, Doctor,
14 get the report for TPPI?

15 MS. CARO: But to re -- to create a clean
16 record, how are we going to do that if we don't know
17 what's -- what you are using in -- in evidence and
18 what everybody is looking at? Why couldn't we all --
19 we need to all be looking at the same thing in order
20 to create a clean record?

21 MR. ROGERS: We could and we may do that, but
22 I -- I want to go through just some background
23 information first.

24 BY MR. ROGERS:

1 Q. So, Doctor, could you pull up your report
2 on T[PPI], please.

3 A. One moment.

4 Q. Actually, why don't we start with -- with
5 S[PPI], because that -- I'll just point you to the
6 section that I was referring to before.

7 A. You would like to start with E[PPI] S[PPI]?

8 Q. Yes, please.

9 A. Okay.

10 Q. So on Page 3 of 9 for S[PPI], the
11 paragraph at the top of the page before you get to
12 interview, midway through -- about midway through that
13 paragraph you say:

14 "They did continue drinking it until they
15 received a letter at some point in 2014, advising that
16 the water was not safe. They then began purchasing
17 bottled water until bottled water began being provided
18 to them for free. At that point they began to drink,
19 cook and wash with it or they used baby wipes to clean
20 themselves instead of using tap water."

21 Right?

22 A. That is what the report says, yes.

23 Q. So for -- for E[PPI] S[PPI], the
24 information that you have that was provided to you by

1 the family and/or through the deposition is that EPP
2 SPPI stopped drinking the water as of sometime in
3 2014, right?

4 A. That -- in my -- my memory of these
5 deposition transcripts, the families were often unsure
6 of the specific dates that these things happened at.
7 I believe that if I put at some point in 2014, it was
8 because the family was not clear about when this
9 occurred.

10 Q. Well --

11 A. But I -- that paragraph is attempting to
12 represent what is in the deposition in abbreviated
13 format as it is relevant to this evaluation.

14 Q. What is your -- what is your assumption,
15 Doctor, or what -- what is your information that you
16 have in making diagnoses or causation -- having
17 causation opinions as to when EPP SPPI stopped
18 drinking water from the Flint River?

19 A. I don't diagnose people with whether or
20 not they drink water from a certain source. That's
21 not a diagnosis.

22 Q. No, no, but I mean, in order to make a
23 diagnosis about the extent to which water was a
24 contributing factor in the blood lead levels that the

1 patient had, you would need to know when they stopped
2 drinking the water, right?

3 A. I -- that -- that information is certainly
4 helpful.

5 Q. So, again, your understanding is, as you
6 wrote in your report, based upon what the SPPI
7 family told you or what is written in their
8 deposition, what they testified to in the deposition
9 is that SPPI SPPI stopped drinking the water in
10 2014, right?

11 A. Correct.

12 Q. And since you raised it on this page of
13 the report, 3 of 9, it goes onto the section Interview
14 after the section that I just referred you to, did you
15 ask the SPPI family to provide any further
16 clarification or information about when they stopped
17 drinking the water?

18 A. If it's not in my interview, I did not.

19 Q. Okay. I -- I didn't see it in your
20 interview.

21 Do you have a memory as to whether you did
22 or you didn't?

23 A. In general, I -- I didn't focus on their
24 water consumption. I focused on the symptoms and --

1 that are relevant to evaluate -- to the
2 neuropsychological evaluation.

3 Q. Okay. Isn't it important for you to know
4 if you were making a diagnosis with respect to what
5 caused the lead exposure to the children, to know the
6 period of time during which they were drinking the
7 water?

8 A. In this case, I -- as I think I mentioned
9 earlier, I am not aware of any other sources of
10 exposure, so the only ex -- source of exposure that I
11 was -- was identified for me was the water exposure.

12 Q. Do you -- are you aware of any evidence
13 that the SPPI boy drank water from the -- from the
14 Flint water supply from January 1st, 2015, forward?

15 A. I -- I don't. I'm not aware of any
16 specific evidence outside of what is reported in my
17 report.

18 Q. And with respect to that information, the
19 information that you did receive, is that the family
20 and, therefore, SPPI, the child, stopped drinking
21 the water sometime in 2014, right?

22 A. Correct.

23 Q. Okay. With respect to APPI TPPI, can
24 you open that one up for me, please, your report?

1 A. Yes.

2 Please proceed.

3 Q. Yes, just a second.

4 I didn't see in your report in the either
5 background section or the -- or, actually, now that --
6 now that I'm looking at it, it doesn't appear that you
7 had a separate interview section for the T**PPI**
8 plaintiff, am I right?

9 Oh, I do. I see it. No, I stand
10 corrected. I see that now. It is at the bottom of
11 Page 2, right?

12 A. The -- the header didn't carry over to the
13 next page, that's correct.

14 Q. Yeah, my -- my bad.

15 So, do you have -- I didn't see a
16 reference in the T**PPI** report in back -- the Background
17 section or the Interview section as to any information
18 that you received about when the T**PPI** plaintiff
19 stopped drinking the water after the switchover.

20 Am I right about that?

21 A. If you read the paragraph directly above
22 the word "Interview" at the bottom of Page 2 --

23 Q. Yes.

24 A. -- there is a discussion of several

1 instances on which Ms. TPPI -- Ms. TPPI tried to
2 restrict APPI consumption of water from the
3 public water system without success.

4 Q. I see.

5 Okay. So, is the -- is the extent of
6 information that you had when you wrote your report or
7 that you have today about the TPPI child's consumption
8 of water contained in that paragraph, the last
9 paragraph of the Background section?

10 A. Yes.

11 Q. I see. And in the interview process, you
12 did not ask for any further clarification on that
13 subject, is that right, for TPPI?

14 A. I did not ask for -- so, in my review of
15 these reports, there -- in my review and writing these
16 reports, there was extensive discussion of this topic
17 in the depositions, and so I focused on other topics
18 that were not covered in the depositions rather than
19 repeating that ground with them.

20 Q. Is that true for all of them? These four
21 I mean?

22 A. Yes.

23 Q. Okay.

24 A. Unless they are -- yeah. I don't think

1 that there is any comment in my interviews about any
2 of these children -- four children about the water
3 consumption, and I -- I went off of their comments in
4 deposition.

5 Q. Thank you. I'm just going to finish up
6 with VPP [REDACTED] and WPP [REDACTED] on this subject of the
7 stoppage of drinking the water, but before I do that,
8 I've got to take a two-minute break for bathroom
9 purposes. So let's go off the record for two minutes,
10 and let's try to keep it short. We'll get right back
11 into it, okay. Thank you.

12 THE VIDEOGRAPHER: We are going off the record
13 at 11:47 a.m.

14 (WHEREUPON, a recess was had
15 from 11:47 to 11:50 a.m.)

16 THE VIDEOGRAPHER: Back on record at 11:50 a.m.

17 BY MR. ROGERS:

18 Q. Okay. Doctor, just finishing this up, do
19 you -- could you pull up the VPP [REDACTED] report,
20 please?

21 A. I have that ready.

22 Q. Thank you very much.

23 On Page 3 you report up at the top of that
24 page that -- and this is in the Background section, so

1 I take it this was -- this is your summary of
2 information that you got from the deposition, is that
3 right?

4 A. The paragraph that begins: "Finally,
5 Ms. Michelle V[REDACTED], R[REDACTED] mother, was deposed
6 on 2/12/20" is a summary of the deposition --

7 Q. Great.

8 A. -- of 2/12/20.

9 Q. Great.

10 So it says there: "Ms. V[REDACTED]
11 reported moving to their home in Flint, Michigan in
12 9/2014."

13 So that's the information you had about
14 when R[REDACTED] V[REDACTED] moved to Flint, September
15 of 2014, right?

16 A. Yeah, that's correct.

17 Q. And then a little bit further down it
18 says, about midway through that paragraph: "She," I
19 take it to mean Mrs. V[REDACTED], "She reported that
20 the family stopped using tap water for drinking and
21 cooking in 12/2014 but continued using it for bathing,
22 dishes, and laundry."

23 Right?

24 A. That is what the report says, yes.

1 Q. And further on, the next sentence: "In
2 2014, also, a filter was installed in the kitchen
3 sink, which was in place for approximately a year
4 thereafter."

5 Right?

6 A. Correct.

7 Q. So, the information that you had as to the
8 time period that R[PPI] V[PPI] was consuming water
9 from the Flint water supply for drinking was
10 September 2014 through December of 2014, right?

11 A. No. If I understand correctly, it was
12 from April of 2014 to December of 2014.

13 Q. But -- but they didn't move to Flint until
14 September?

15 A. Oh, I'm sorry.

16 I have to -- I would -- I would have to
17 review that deposition. I forget if they lived in
18 more than one place in Flint. That may be correct.

19 Q. Well, just to see what you wrote here, at
20 the -- at the top of the page: "Finally, Ms. Michelle
21 V[PPI], R[PPI] mother, was deposed. She
22 reported living in an older, rented home in Tampa,
23 Florida from the time of R[PPI] birth through
24 relocating to Flint." And then, the next sentence:

1 "She reported moving to their home in Flint in
2 September of 2014."

3 So as -- as far as you reported, that's
4 what happened, right?

5 A. Correct.

6 Q. And then could you open up your report for
7 WPP, please.

8 This --

9 A. Yes, I have it in front of me.

10 Q. Thank you.

11 This is going to be Page 3 of the report
12 as well.

13 Again, under the Background section,
14 right, on page 3, middle of the page, it is reported:
15 "Ms. Martin reported that she" -- I'll go back, sorry,
16 one sentence before that.

17 "Ms. Martin noted that in 4/2014 when the
18 Flint, Michigan water system was converted to the
19 Flint River, she noted abnormal smell and taste of the
20 water, with yellow discoloration, at times.
21 Ms. Martin reported that, following this, she
22 contacted her physician and her landlord, but she was
23 ultimately informed by the latter that it was outside
24 of the landlord's control."

1 Then this is the significant part here, I
2 think, if you could focus on this.

3 "Her pediatrician advised her to
4 discontinue drinking tap water. Ms. Martin reported
5 that she did so 'in the late spring, early summer
6 of 2014.'"

7 Right?

8 A. That -- that is how I understood the
9 deposition.

10 Q. So the information that you had about the
11 plaintiff WPPi is that she stopped drinking the water
12 as of late spring or early summer 2014, right?

13 A. That was used in the home. If my memory
14 serves, these -- these transcripts are unclear about
15 any consumption at school or elsewhere.

16 Q. I think -- I think you've probably
17 answered these questions, but just to make sure and
18 close out this particular section here of my
19 questions, is it correct that you did not analyze the
20 extent to which drinking the water led to the blood
21 lead levels of these children versus other sources?

22 A. I considered all of the sources of lead
23 exposure that were known to me based on the medical
24 records and -- and other records that were provided

1 for me to review, the ones that are summarized in the
2 reports, and that I also read to you earlier in this
3 deposition, and so I considered any source of lead
4 exposure that was revealed to me by reviewing those
5 and whether that timeframe potentially correlated with
6 the problems that were involved. But I did not
7 conduct any kind of analysis to determine the
8 percentage of lead that was consumed via these other
9 sources because, to the best of my knowledge, there
10 was no evidence that I reviewed that suggested that
11 lead was consumed via these other sources.

12 Q. And is that true also with respect to the
13 bone lead amounts, that is, you didn't analyze
14 scientifically the extent to which different sources
15 besides the water for lead could have contributed to
16 the amount of lead in their bones, is that right?

17 A. It is correct that I am not aware of any
18 other sources of lead exposure.

19 Q. Did you undertake any analysis of the
20 blood lead levels for children in the United States
21 in -- during the period of time that the blood lead
22 tests were done for these children?

23 A. I reviewed information about this in --
24 that is in the references that I provided to you.

1 There are children in various communities that have
2 positive lead values and those are generally tracked.

3 Q. What's the average nationally?

4 A. And as --

5 Q. Sorry.

6 A. The average of what?

7 Q. Blood lead levels.

8 A. So the -- the question is unfortunately
9 complicated by variable practice. This -- this is
10 just something that is a limitation in the information
11 that's available.

12 If you look at these bellwethers, for
13 instance, the numbers of lead assays that they
14 underwent is quite variable. If I remember correctly,
15 of the children that I evaluated, one of them had as
16 many as seven or eight lead assays during the period
17 of interest, and I think there was at least one that
18 didn't have any. And so, there are some limitations
19 in where information is available, but -- but there is
20 general information about -- usually in the form of
21 the percentage of children that have elevated lead
22 levels.

23 Q. Yeah, so what is that information?

24 A. I'd have to review the literature. The

1 focus with Flint has been that that number increased
2 as described in the Hanna-Attisha article.

3 Q. I understand, but I'm -- I'm trying to get
4 at this point, Doctor. You -- there, as you just
5 described, with respect to these four bellwethers now
6 that we are focusing on, they -- some had blood lead
7 levels tests done at various points in time and at
8 least one did not have any.

9 Is that your memory, basically?

10 A. I think that the one that did not is not
11 one of these four.

12 Q. Okay. All right. Fair enough.

13 But -- but there are blood lead level
14 tests that were done on these four children, right?

15 A. They are reported in the -- the ones that
16 I had access to were reported in the background of
17 these reports.

18 Q. Right. And you -- you actually received
19 copies of the blood lead level tests, right?

20 A. I -- I believe that it was a mixture of
21 reporting the lab as part of a pediatrician encounter
22 summary and the actual lab report was in the medical
23 records, one or both.

24 Q. So -- so my question is did you compare

1 the blood lead levels in the test reports or the
2 pediatrician's reports or for whatever medical reports
3 and information you had to blood lead levels for
4 children of the same age group nationally during the
5 same period of time?

6 A. I primarily compared them to their
7 reference ranges.

8 Q. What do you mean "reference ranges"?

9 A. Meaning that we expect blood lead levels
10 to be negative and a positive result is considered
11 abnormal.

12 Q. So is the answer to the question that you
13 did not compare the blood lead levels of these four
14 plaintiffs, as the test reports indicate, to any type
15 of database for what the national average or average
16 would be, averages across the country would be for
17 children in their age group at the same time?

18 MS. CARO: Objection; asked and answered.

19 You can answer.

20 BY THE WITNESS:

21 A. I -- I believe I -- I've already answered
22 that question, but I -- I considered the lead levels
23 that were provided in the medical records with the
24 expectation that -- that venous or capillary assays of

1 blood lead should be negative and in these cases they
2 were not.

3 Q. So I'm going to share my screen and ask
4 you about a particular document at this time. I think
5 it should be up on screen.

6 Can you see my screen now, Doctor?

7 A. I see a website, it looks like a Fourth
8 National Report on Human Exposure to Environmental
9 Chemicals.

10 Q. It is. It's a -- it is a -- in a PDF
11 form, but you are right.

12 So this is -- are you familiar with this
13 report, the Fourth National Report on Human Exposure
14 to Environmental Chemicals, Tables, January 2019,
15 Volume One, from the US Department of Health and Human
16 Services, Centers for Disease Control and Prevention?

17 A. I -- I'm not sure if I have reviewed this
18 specific report, but I'm -- I'm aware that the CDC
19 catalogs this information.

20 Q. Do you consider the information cataloged
21 by the CDC with respect to this information in this
22 report to be accurate and reliable?

23 A. I would have to review the report.

24 Q. I want to direct your attention to a

1 particular page. And let me just make sure I get that
2 right.

3 This is page --

4 MR. ROGERS: Oh, can we mark this as, Juliana,
5 as -- is this Exhibit 4 now?

6 THE COURT REPORTER: Yes.

7 MR. ROGERS: Thank you. So Exhibit 4.

8 (WHEREUPON, a certain document was
9 marked Mira Krishnan, Ph.D.
10 Deposition Exhibit No. 5, for
11 identification, as of 10/05/2020.)

12 BY MR. ROGERS:

13 Q. So I have turned to Page 311, Doctor, and
14 you can see that this is the page that has the table
15 with summaries of blood lead 2011 through 2016.

16 And you can see at the top here it says:
17 "Geometric mean and selected percentiles of blood
18 concentrations as measured," it says here, "in
19 micrograms per deciliter."

20 You're familiar with that measurement,
21 micrograms per deciliter, right?

22 A. Yeah, that's -- that's the typical way
23 that blood lead is -- is described.

24 Q. Right.

1 And it says: "For the US population from
2 the National Health and Nutrition Examination Survey."

3 What's that?

4 A. To the best of my knowledge, NHANES is a
5 national survey of -- of a variety of health factors
6 in Americans.

7 Q. So you used the acronym NHANES,
8 N-H-A-N-E-S.

9 You're familiar with that?

10 A. Yes.

11 Q. And -- and in the field of epidemiology
12 and measuring various levels of certain chemicals in
13 the population, that this information is relied upon
14 by people in your field regularly, is that right?

15 A. It's a common source of data for analyses
16 that is -- that are published in the scientific
17 literature.

18 Q. Do you consider it to be reliable?

19 A. I generally consider the CDC to be a
20 trustworthy source.

21 Q. Well, that's good, because, you know, in
22 today's day and age, right, there's some folks out
23 there who don't, but that's a discussion for another
24 day, I guess.

1 So, I want to direct --

2 A. I -- I am not, in any event, one of them.

3 Q. Yeah.

4 MR. STERN: Like the entire University of
5 Florida academic staff. Sorry.

6 MR. ROGERS: Not -- never mind.

7 BY MR. ROGERS:

8 Q. So we -- we digress. Let's get -- let's
9 all get back to some questions here.

10 So, Doctor, do you see the -- I wanted to
11 direct your attention to this -- can you see my cursor
12 moving around here, this section here, which is the,
13 you know, Ages 1 through 5 and then up through Age 6
14 to 11?

15 A. Um-hum.

16 Q. During years 2011 through 2016, right?

17 A. I see that.

18 Q. And up above, as we discussed earlier, it
19 says, these are the numbers in micrograms per
20 deciliter. And the first column here is the geometric
21 mean with the 95 percent confidence interval.

22 What -- what does that mean, 95 percent --
23 I'm sorry -- geometric mean, that's the average,
24 right?

1 A. It is, correct.

2 Q. So, for example, if we just take this
3 first -- or this last line here, Age 6 through 11,
4 2015-16 and you go across the column here, there
5 was -- the sample size, there were a total in this
6 database of 1,023 blood lead levels in the database,
7 right?

8 A. My understanding is that there are -- that
9 that means that there are 1,023 samples that were
10 children who were between 6 and 11 who had data
11 between 2015 and 2016.

12 Q. Exactly.

13 A. Although, again, I am -- I'm just
14 reviewing this now.

15 Q. Exactly. You said is it better than I --
16 I did in my question.

17 But this column here means that of that
18 group of tests that were done, Ages 6 through 11
19 during that timeframe, the average blood lead level in
20 micrograms per deciliter was .571, right?

21 A. Correct.

22 Q. And if you go up to the other columns,
23 Ages 1 through 5, 2011-12, .970 and so forth, so if
24 you focus on the period of time when these blood lead

1 levels were being measured on children ages 1 through
2 5 during 2015 and '16, the average is, as listed here,
3 .758, right?

4 A. I -- I don't believe that any -- oh, yes,
5 that's correct.

6 Q. And then you have .681 for ages 6 through
7 11 in earlier years and so forth. But this -- this
8 block here that I'm basically trying to outline, Ages
9 1 through 5 through Ages 6 through 11, that would be
10 the relevant comparison group for children like these
11 four wether -- four bellwether plaintiffs, right,
12 during these ages these periods of time, right?

13 A. That's correct.

14 Q. And did you, in your work in the case,
15 undertake an analysis of how the four bellwether
16 plaintiffs, S[PPI], T[PPI], Va[PPI] and W[PPI], how
17 their measured blood lead levels compared to these
18 averages, these national averages in this database?

19 A. I completed neuropsychological
20 evaluations. My scope of work was not to do a
21 statistical analysis of their blood lead in comparison
22 to the general population. My scope of work was to
23 determine if they had cognitive or emotional
24 impairments.

1 Q. Okay. So the answer then is no, am I
2 right, you did not as part of your work in the case
3 compare the blood lead levels for these four children
4 with what was being found nationally for the same age
5 level kids throughout the country during these years,
6 right?

7 A. Correct.

8 Q. Just to make sure that -- so you don't see
9 that on the screen anymore, do you, that -- that has
10 stopped?

11 A. It has stopped.

12 Q. Thank you.

13 Similar questions with respect to bone
14 lead scans.

15 So you received -- and I'm just focusing
16 on the four plaintiffs we have now in the case, these
17 four.

18 You received reports with references to
19 the amount of lead in their bones, right?

20 A. Correct.

21 Q. Do you have an understanding that the
22 bones that were tested were the children's tibias?

23 A. I -- I understand that that is common, but
24 I -- I only reviewed the one-page documents that --

1 that we were talking about earlier.

2 Q. Okay. So you don't know which bone was
3 scanned based on that report itself?

4 A. I'm not able to testify to the specifics
5 of -- of bone lead measurement. That's outside of my
6 area of expertise.

7 Q. So if I were to tell you that these were
8 done on tibias using a portable XRF machine, that's
9 x-ray fluoroscopy machine, you -- you wouldn't know
10 one way or the other whether that was accurate?

11 A. That sounds correct to me, but I -- I
12 don't know for sure.

13 Q. Do you know -- do you know and/or did you
14 do any analysis or investigation into what the
15 averages for bone lead in tibias recorded by portable
16 XRF equipment in children of comparable ages to these
17 four plaintiffs from any database?

18 A. I -- I really only looked at, as I -- as
19 earlier in this deposition we discussed it, that I
20 believe that one of the articles I referenced
21 discusses bone lead levels in relation to cognitive
22 functioning and that was the extent of -- of what I
23 looked at.

24 Q. Okay. So is the answer then that you

1 don't know what databases are out there which would
2 show what the average amount of bone lead measurements
3 would be for children of -- in this age group from
4 around the country?

5 A. I have -- have not looked into that.

6 Q. Did -- did -- have you ever had any
7 conversations with Dr. Specht in the case at all?

8 A. I have not.

9 Q. Did you ever receive any information from
10 anyone about whether -- what databases Dr. Specht has
11 or used for making determinations about these bone
12 lead scans and what they mean or don't mean?

13 A. You would have to ask Dr. Specht that
14 question.

15 Q. Yeah. I'm just asking if you have had any
16 conversations with him or know anything about that?

17 Is the answer no?

18 A. I have not had any interactions. Yeah,
19 no.

20 Q. Have you read his report?

21 A. I -- the -- the documents that I reviewed
22 are the ones that I listed to you earlier and that are
23 reviewed in the reports. I -- I didn't review
24 anything that is not -- that we have not already

1 discussed.

2 Q. Yeah, sorry. I was referring to his
3 expert report. So besides the reports of the blood --
4 I'm sorry -- of the bone scans, you haven't read
5 Dr. Specht's report that was provided in the case,
6 right?

7 A. That's correct.

8 Q. Do you -- do you have an understanding of
9 what the difference is between what these measures
10 tell you about the -- the period of time of exposure,
11 that is to say, what does -- when you are looking at a
12 blood lead test, what does that tell you about the
13 period of time, if anything, as to which that
14 particular child would have been exposed to and
15 consumed or ingested lead?

16 A. So, in a general way, what I can -- my
17 understanding is that when lead is in the bloodstream
18 it is gradually renally excreted, meaning that it
19 is -- is passed out in the urine.

20 What complicates this is that lead in the
21 body, to the best of my understanding, once it is
22 consumed it enters various other kinds of tissue,
23 including the bones. Its presence in these other
24 tissues is relatively more stable, but it also

1 recirculates between these other tissues and the
2 bloodstream, and so -- so if you -- if you were to go
3 and ingest lead, then in general what would happen, if
4 you ingested lead just once is that you would have a
5 peak in your blood lead level and you would excrete
6 the lead out over a relatively short period of time,
7 primarily through your urine.

8 If you had continuous exposure to lead or
9 sufficient exposure to lead, some of that lead would
10 also make its way into other tissue. It can
11 recirculate back out into the blood and remain in the
12 blood lead level.

13 But then in general the tissue
14 measurements, like bone lead density, I understand
15 them to be suggestive of longer term or cumulative
16 exposure to lead because my understanding is that lead
17 remains in bone significantly longer than in blood.

18 Q. Thank you.

19 So your understanding is then that the
20 bone lead levels that were recorded by these bone
21 scans represent the cumulative amount of lead that
22 this child -- these children were exposed to over the
23 course of their whole lifetime, right?

24 MS. CARO: Objection; asked and answered.

1 BY THE WITNESS:

2 A. My understanding is that -- that -- sorry?

3 MS. CARO: No. I said: "Objection; asked and
4 answered."

5 Go ahead.

6 BY THE WITNESS:

7 A. My understanding is that lead levels do
8 gradually dissipate in bones, but it is a much slower
9 process. There -- I am not an expert in bone
10 pathophysiology. I'm a clinical neuropsychologist,
11 but my understanding is that there are multiple
12 variables that affect this, but it is typically over a
13 period of years that bone lead levels dissipate. And
14 so it's a long-term average in the case of these
15 children.

16 MR. ROGERS: Okay. So it's about 12:15. I'm
17 going to get into your specific reports for each of
18 the bellwethers, and I will bring up and mark the
19 reports and we'll go through them in quite some detail
20 along with the backup information, so why don't we
21 take our lunch break now. It is 12:15. Half an hour.
22 12:45 we'll come back, and I'll -- I'll get the
23 reports lined up and we'll mark those as exhibits and
24 start going through them, okay.

1 THE VIDEOGRAPHER: Going off the record, 12:17.

2 (WHEREUPON, a recess was had

3 from 12:17 to 12:50 p.m.)

4 THE VIDEOGRAPHER: Back on the record. The time
5 is 12:50 p.m.

6 BY MR. ROGERS:

7 Q. Okay. Doctor, I want to get into the --
8 your reports for these specific four bellwether
9 plaintiffs, so I'm going to share my screen and we'll
10 mark this as -- this is going to be Exhibit 6,
11 because --

12 A. Can I clarify something before your
13 question, please?

14 Q. Do you mean in re -- clarify a response to
15 a prior question or --

16 A. Yes, please.

17 Q. Sure. Go ahead.

18 A. You had asked for which of the references
19 discussed bone lead, and I just wanted to clarify that
20 it is -- I was wrong. It was Lidsky and Schneider,
21 L-i-d-s-k-y, S-c-h-n-e-i-d-e-r, and Mason, Harp & Han.
22 Those two references are the ones that I should have
23 selected.

24 Q. Okay. When you say "references to lead,"

1 do you mean with respect to the -- the averages or
2 the -- or the bone lead or which? I'm not sure which
3 it was?

4 A. You had asked about bone lead.

5 Q. Okay. So those are the two that reference
6 bone lead?

7 A. I believe that's correct.

8 Q. When you did your review, did you note in
9 either of those two papers whether they had numbers
10 for average lead that they found in any databases of
11 anybody who was reporting it?

12 A. They focused on lower exposure levels that
13 caused cognitive impairment.

14 Q. I know, but you -- see, you didn't answer
15 my question.

16 What -- what -- did -- did either of those
17 two papers that you referenced for bone lead describe
18 any averages based on any databases for, you know,
19 lots of bone lead scans that were done?

20 A. No.

21 Q. Thank you.

22 MR. ROGERS: Okay. So Juliana corrected me that
23 that last exhibit that we looked at, which I believe
24 was the NHANES data from the CDC, that's actually

1 Exhibit 5, so we are going to correct that, and this
2 is now Exhibit 6.

3 Do you have that right, Juliana?

4 THE COURT REPORTER: That's correct.

5 MR. ROGERS: Thank you very much.

6 BY MR. ROGERS:

7 Q. Okay. Doctor, so it is your report that
8 we'll mark as Exhibit 6, it should be up on the
9 screen, for EPPPI SPPI.

10 Is that right?

11 A. Correct.

12 (WHEREUPON, a certain document was
13 marked Mira Krishnan, Ph.D.
14 Deposition Exhibit No. 6, for
15 identification, as of 10/05/2020.)

16 BY MR. ROGERS:

17 Q. And it goes through, the end is the
18 bibliography, but it doesn't have the underlying test
19 data which will be a separate exhibit, which will be 7
20 when we get to it, I think in a few minutes. But just
21 to get oriented here about some specific information
22 for this young boy.

23 So, the date of your evaluation was done
24 on June 28th, 2020, right?

1 A. Correct.

2 Q. And he, at that time, was 9. -- well, is
3 that nine years, three months?

4 A. Correct, that's nine years, three months.

5 Q. Thank you.

6 And then his date of birth was PPI ,
7 2011, and he was in the third grade, right?

8 A. That's correct.

9 Q. With respect to the -- when your report --
10 at least the final report was -- when you signed it,
11 you mentioned that there is a date there on Page 9 of
12 9, August 4th, 2020.

13 That's the date that you finalized the
14 report?

15 A. That's correct.

16 Q. A couple of specific questions to start us
17 off here.

18 The only blood lead measurement that you
19 are aware of for E PPI S PPI is, as I've highlighted
20 here, on February 16th, 2016: "E PPI had a negative
21 capillary blood lead level of less than 3.3 micrograms
22 per deciliter," right?

23 A. I think that that's correct.

24 Q. So that would have been in February -- he

1 would have been almost five years old at that point?

2 A. Correct.

3 Q. And so, as we discussed earlier -- well,
4 let's talk about the level itself.

5 What does it mean when it reports less
6 than 3.3?

7 A. So, I am not an expert on blood lead
8 measurement. My understanding as a user of the data
9 clinically is that it means that the lowest detectable
10 level with that test was 3.3 micrograms per deciliter
11 and the value was -- that there was no evidence of
12 lead higher than that level.

13 Q. So, therefore, you know, based on this,
14 since it is below the level of detection, you don't
15 know what his actual blood lead level was at that
16 time, right?

17 A. Correct.

18 Q. It -- it could have been anywhere from
19 zero --

20 A. That's why it is marked as negative.

21 Q. Right. So when -- when we were having a
22 discussion earlier, I think what you were describing
23 is that you were attempting to determine not how blood
24 lead levels measure to any average amount for --

1 nationally for kids this age, but rather you were just
2 evaluating them for purposes of determining whether it
3 was positive or negative, right?

4 A. That is correct.

5 Q. And this one -- this one is reported as
6 negative?

7 A. Correct.

8 Q. So, are you aware of any other blood lead
9 level test ever performed on the plaintiff EPP
10 SPP?

11 A. I -- is it a -- may I con -- consult my
12 report briefly?

13 Q. Yes. I don't think there is, but if you'd
14 like to consult, please do, yep.

15 A. My understanding is that the only -- the
16 only lead levels that I had available to review were
17 the negative result in 2016 and then the bone lead
18 measurement which was in 2019.

19 Q. Right. So let's take a look at that. The
20 bone lead measurement here is on the next page,
21 Page 2. I am highlighting it here.

22 That was measured at 6. -- reported at
23 6.72 micrograms per gram, right?

24 A. Correct.

1 Q. But, again, in terms of what that means
2 with respect to averages or the period of time over
3 which there was an exposure besides over his whole
4 life, you -- you don't know what those are, right?

5 A. I know that the neuropsychological
6 literature shows cognitive impairments in children
7 with positive bone lead measurements of below
8 10 micrograms per gram, but beyond that, no.

9 Q. So in terms of -- to get back to that
10 point, in terms of what this means, if anything, the
11 bone lead scan, about when, during what period of time
12 this particular child may have been exposed to lead or
13 ingested lead, you don't know, it is just that at some
14 point over the course of his lifetime, right?

15 A. I am not an expert in bone lead
16 measurement, but my understanding is it is a long-term
17 average, essentially.

18 Q. So is it correct that you do not know what
19 this means, this measurement and this amount that was
20 recorded on April -- sorry -- August 24, 2019, about
21 the period of time over which he was exposed to and
22 ingested lead, right?

23 MS. CARO: Objection; asked and answered.

24 BY THE WITNESS:

1 A. It's only -- I only know that it is a long
2 period of time that he would not -- that he would be
3 unlikely to have that bone lead level based on an
4 acute exposure of lead.

5 BY MR. ROGERS:

6 Q. Okay. Let's turn to your diagnoses that I
7 think we looked at before.

8 So for EPPI SPPI [REDACTED] here is your
9 diagnoses on Page 8 of 11 of the report. I'm
10 highlighting it here.

11 You say: "Overall, my pride" -- "my
12 primary diagnostic impression is ADHD (F90.1), which
13 is more likely than not a result of developmental lead
14 exposure."

15 Right?

16 A. That -- that is what the report says, yes.

17 Q. So, I want to ask you some questions about
18 ADHD, and it goes to the diagnostic criteria that we
19 were discussing earlier.

20 I think you said, and correct me if I'm
21 wrong, that the diagnostic criteria that you used for
22 this diagnoses was based on the DSM-V, right?

23 A. I just said that I used the DSM-V as a
24 guideline, I believe, and I make ICD diagnoses based

1 on the overall information and -- and the state of the
2 scientific literature.

3 Q. Well, why then did you put the code in
4 there which is a code for the DHM -- a DSM-V?

5 A. As I indicated earlier in the deposition,
6 that is the ICD code for ADHD.

7 Q. Okay. Well, let's take a look at it then.

8 So, with respect to -- but the ICD-10, as
9 we talked about earlier, it doesn't have diagnosis --
10 diagnostic criteria, right?

11 A. If you would like to put the ICD-10 up for
12 me to look at it, I'm happy to look at it.

13 Q. Well, I'm asking you. I don't have it
14 handy. Do you -- do you -- does it or doesn't it?

15 A. So, in general, as I said previously, we
16 use guidance from sources like the DSM-V as well as
17 the current scientific literature to make accurate
18 diagnoses. Engaging in -- you identify the diagnosis
19 that best fits the -- the symptoms and signs that we
20 observe.

21 Q. I know. But my question was, I thought we
22 had covered this, the ICD-10 does not have, does not
23 contain diagnosis -- diagnostic criteria for ADHD,
24 right?

1 A. I believe I answered that question
2 previously.

3 Q. Yes. And am I correct, what I just said?

4 A. I believe you are.

5 Q. Okay. So I've got up on the screen now,
6 and let's make it Exhibit No. --

7 MR. ROGERS: Are we up to 7, do I have that
8 right, Juliana?

9 THE COURT REPORTER: Yes.

10 (WHEREUPON, a certain document was
11 marked Mira Krishnan, Ph.D.
12 Deposition Exhibit No. 7, for
13 identification, as of 10/05/2020.)

14 BY MR. ROGERS:

15 Q. So this is the DSM-V. It is from Page 59
16 of the DSM-V.

17 Is this the criteria that you applied at
18 least in part as the criteria for making the
19 diagnosis -- the diagnosis of

20 attention-deficit/hyperactivity disorder in young EPP
21 SPP?

22 A. Yes.

23 Q. So which of these -- it says here in order
24 to -- the diagnose -- diagnostic criteria are:

1 "A persistent pattern of inattention
2 and/or hyperactivity-impulsivity that interferes with
3 functioning or development, as characterized by (1)
4 and/or (2)."

5 Right?

6 A. Correct.

7 Q. And for (1), it says: "Inattention: Six
8 (or more) of the following symptoms have persisted for
9 at least 6 months to a degree that is inconsistent
10 with developmental level and that the negative" --
11 "and that it negatively impacts directly on social and
12 academic/occupational activities."

13 Which of these did you find in EPPI
14 SPPI of these six or these inattention criteria?

15 A. So if you -- if you'll notice in my report
16 at the end of Page 7 I indicated that the prominent
17 symptoms were hyperactivity and impulsivity. I can --
18 will review my report briefly, but as far as
19 inattention symptoms go, the family reported
20 intermittent focus, distractability, so they reported
21 symptoms consistent with Items A(1)a, b.

22 They reported issues, I believe,
23 consistent with Item d. And I would have to look and
24 see if there are any other inattention symptoms that

1 they reported. But I think that those are the primary
2 ones.

3 Q. So those were -- there were three?

4 A. I believe I've told you that the primary
5 symptoms were hyperactivity/impulsivity. They are in
6 the next section of the document.

7 Q. Okay. But it says here six -- up at the
8 top, it says: "Six (or more) of the following
9 symptoms have persisted for at least 6 months," for
10 inattention, and you only listed three, and it ends
11 with Paragraph i, right?

12 A. Scroll up, please.

13 ADHD is: "A persistent pattern of
14 inattention and/or hyperactivity-impulsivity that
15 interferes with functioning or development, as
16 characterized by (1) and/or (2)."

17 Q. Oh, I see what you are saying.

18 So he -- he showed three, according to the
19 parents' report -- and by the way, this diagnosis was
20 made on the basis of the parent reporting, right?

21 A. On the basis of my overall
22 neuropsychological evaluation.

23 Q. Which was -- was there something beyond
24 the -- what the parents reported that lead you to this

1 diagnosis?

2 A. It's described in my report. Yes.

3 Q. Tell me what it is, please.

4 A. So if I -- if you see the Observations
5 section of my report on Page 4, it says there were
6 times when he would respond quizzically or What? to
7 directions that are within context. I had to repeat
8 myself. There were only sometimes when he could work
9 independently. He required coaxing or redirection to
10 complete cognitive testing.

11 And then if you look at on Page 5, he was
12 impulsive on three separate tests that I describe in
13 the paragraph that begins with: "I also looked at
14 frontal/executive functions and detail."

15 Q. Okay. Is that it?

16 A. In addition to that, I completed BASC-3,
17 B-A-S-C, assessment of parent reports of symptoms.
18 The difference between that and the interview is that
19 the BASC allows for comparison of parent ratings to
20 those of parents of other children of the same age.
21 And on that hyperactivity is rated as 97 -- worse than
22 97 percent of age peers.

23 Q. Uh-huh. Anything else?

24 A. It is all in the report that you have

1 already been provided.

2 Q. I know. But I'm asking you.

3 Is it -- is there anything else besides
4 what you just told me?

5 A. I conducted an interview, I did behavioral
6 observations, I completed a neuropsychological
7 evaluation and I drew conclusions from those content
8 areas.

9 Q. So getting to the next page of this ADHD
10 from the Diagnostic Criteria for DSM-V, which of these
11 symptoms of hyperactivity did -- or I'm sorry -- yeah,
12 hyperactivity and impulsivity did he demonstrate?

13 A. So, I observed -- between my observations
14 and the parent report, he had 2a, 2d, 2e, 2f, 2g, 2h,
15 and 2i.

16 Q. All right.

17 Is any of that based on testing or
18 evaluations versus parental reporting?

19 A. It is based on a combination of the two.

20 Q. Which are parental reporting and which are
21 tests for evaluation?

22 A. As a standard of practice in
23 neuropsychology in general and in psychological
24 assessment, I correlate the parent report with the

1 symptoms that I'm observing and the test results, but
2 I don't say that Item 2a is because the parent said
3 and Item 2b is because I observed it. These are
4 things that I observed that were consistent with what
5 parents report of EPPi functioning.

6 Q. Is there -- did you arrive at a severity
7 level with respect to attention -- his attention
8 deficit hyperactivity disorder, that is to say,
9 mild -- excuse me -- moderate or severe?

10 A. I characterized it as mild at the bottom
11 of Page 7 of my report.

12 Q. Thank you.

13 What -- what is the basis for
14 characterizing it as mild?

15 A. That was my holistic opinion based on the
16 parent report, the -- the symptom report on the BASC
17 and my observations and testing results.

18 Q. So, to what extent -- or what is the
19 prevalence of ADHD in the general population for
20 children?

21 A. It is in the order of 2 to 3 percent.

22 Q. So what are the causes of ADHD?

23 A. In general, ADHD can occur based on
24 genetic determinants. ADHD has been associated with a

1 number of environmental determinants as well.

2 So ADHD can occur in families, but it can
3 also occurs spontaneously in children in a family in
4 the absence of -- of a family history.

5 Q. So what did you do to rule out genetics or
6 spontaneously occurring ADHD in a mild severity level
7 for EPPi SPPi?

8 A. In EPPi case, I -- I -- in general I ask
9 about family medical history, I believe in this case
10 there was no contributory family medical history.
11 I -- and then I consider whether there are other
12 explanations.

13 In this case the two explanations really
14 that would be available would be exposure to lead that
15 I -- that I know of and -- and spontaneous ADHD.

16 Q. So what -- what -- tell me the
17 characteristics of spontaneous HDAD -- HD.

18 What does that mean?

19 A. Meaning ADHD that occurs without any --
20 any other explanation. We don't always have a good
21 explanation for why these conditions occur.

22 Q. So how was it that, in terms of a
23 differential diagnoses process that you described to
24 me earlier, that you ruled that out?

1 A. So, I can't talk about everything that is
2 possible. I can really only talk about the
3 probabilities involved. In this case there is a
4 known -- there is a known exposure to lead at some
5 time during EPPI childhood. ADHD is associated in
6 significantly increased rates in children who are lead
7 exposed at levels comparable to EPPI, and -- and so
8 it is more likely that it was caused by that given
9 that we know that than -- than having been caused by
10 some other unknown cause that we have not identified.

11 Q. But I thought we established that with
12 respect to his blood lead level lead, it was negative?

13 A. With a high threshold for detection.

14 Q. Well, but from a scientific point of view,
15 since it was below the level of detection of that
16 test, all it means is that you don't know anything
17 about his blood lead level except it was lower than
18 that.

19 It could be zero, right?

20 A. He also had a positive bone lead level.

21 Q. All right. We'll -- we'll get to that in
22 a minute.

23 But with respect to the period of time
24 during which EPPI was exposed to lead at some point in

1 his lifetime, what do you know about that?

2 A. I'm sorry. I don't understand the
3 question.

4 Q. Your diagnosis depends upon the fact that
5 E[PPI] was exposed to lead at some -- at some point
6 during his lifetime in terms of ingestion, right?

7 A. Correct.

8 Q. And you describe it as, I think what's the
9 exact word that you used, "developmental lead
10 exposure," so that means during what period of time,
11 "developmental"?

12 A. Well, in E[PPI] case, during childhood, in
13 E[PPI] case that would be his whole life.

14 Q. Okay. Yeah, so --

15 A. But during a period of time in which the
16 brain is developing.

17 Q. So that -- that includes any point in time
18 from his date of birth up through the time that you
19 examined him, right?

20 A. Again, my understanding of bone lead
21 levels is that it takes time to accumulate a bone lead
22 exposure. And so an acute exposure shortly before I
23 saw him would be an unlikely explanation for this
24 pattern of results.

1 Q. I guess what I'm trying to get at, Doctor,
2 is: You don't know the period of time over which he
3 was exposed developmentally to lead through ingestion
4 apart from the fact that it was at some point in
5 between when he was born and when you did your
6 examination, right?

7 A. That's -- that is fair, yes.

8 Q. So the extent to which EPPI SPPI had
9 exposure and ingestion of lead before April 2014, you
10 don't know the extent to which that happened, right?

11 A. I only know that I am not aware of any
12 other -- I was not at the time of this evaluation
13 aware of any other source of lead exposure for EPPI
14 besides having known that he consumed the water in
15 question.

16 Q. Do you -- but is it true with respect to
17 EPPI SPPI that as far as you know no tests were
18 done for the water to -- in his residence, in the
19 SPPI residence, to determine at any point in time
20 what the lead concentration or levels were in the
21 water.

22 Is that a fair statement, a correct
23 statement?

24 A. I reported anything I had for review in --

1 in my evaluation report. I don't see that there, so I
2 am not -- I think that that's correct, that I am not
3 aware of that.

4 Q. Okay. And similarly, the extent to which
5 he was exposed to ingestion of lead between April 2014
6 and January 1st, 2015, you don't know the extent of
7 that, do you?

8 A. Somebody else -- a different kind of
9 expert would have to testify with respect to the water
10 supply at his home. I know that he was within the
11 catchment area where elevated lead levels were
12 observed, but I don't know any more than that.

13 Q. Did -- have you ever seen any papers
14 that -- besides Dr. Hanna Mona Attisha (sic) -- never
15 mind, strike that. We'll -- we'll get to that later
16 on.

17 So, in terms of your differential
18 diagnoses, just to -- just to finish this up now and
19 to clarify, the -- it's understood in the
20 neuropsychological community that ADHD can be caused
21 by genetics, it could be spontaneous ADHD, or it could
22 be attributable to and -- and contributing factors
23 being exposure to some type of toxins, right,
24 including lead?

1 A. That's correct. Those -- those categories
2 are not necessarily mutually exclusive, but that's
3 correct.

4 Q. Okay. And in terms of your attempting to
5 make a differential diagnoses that it was due to, more
6 likely than not, as you describe it, developmental
7 lead exposure, you ruled out genetics because the
8 family didn't report a history of anyone else in the
9 family being -- having ADHD, right?

10 A. I would have to look in my report quickly.
11 I'm not aware of any other ADHD in the family.

12 Q. All right. So that's -- based on that,
13 your interview with the family, that's how you ruled
14 that out as part of the differ -- differential
15 diagnosis -- or the final diagnoses, right?

16 A. Yes.

17 Q. And then with respect to spontaneous ADHD,
18 you ruled that out because why? I -- I think I
19 understand what you said, but just explain it to me so
20 I make sure we have it.

21 A. So if, in general, if there is a disease
22 or disorder that we are diagnosing, the -- we don't
23 rule out the sort of spontaneous or idiopathic case
24 first. That's the last explanation when -- when

1 nothing else applies.

2 Q. I see.

3 So what you are saying is that you made
4 the determination it was most likely the result of
5 developmental lead exposure because there was evidence
6 of that and, therefore, that's what you would say is
7 more likely than not as opposed to spontaneous, is
8 that right?

9 A. Given that this is a child where I am not
10 aware of any family medical history of ADHD, there is
11 no clear complaint of issues related to ADHD predating
12 the water and there is known lead exposure and there
13 are no other known exposures that would explain the
14 symptoms, yes.

15 Q. I want to ask you about your statement in
16 the paragraph preceding the Diagnosis section where
17 you say -- do you see it at the top of Page 8?

18 Let me bring that up for you.

19 A. Please.

20 Q. This sentence here:

21 "ADHD is not uncommon in the general
22 population, by it is known to occur with an elevated
23 rate in children exposed developmentally to lead, and
24 it is within the range of impairments established as

1 consequences of lead neurotoxicity, even at low
2 concentration levels."

3 And you cite to the Mason and the Lidsky
4 papers, right?

5 A. Correct.

6 Q. And then you go on to say:

7 "In the absence of any evidence supporting
8 any other potential cause of either EPPH lead
9 exposure or his ADHD symptoms, it is more likely than
10 not" it is the "direct result of lead exposure through
11 the Flint water system."

12 Right?

13 A. Correct.

14 Q. So, with respect to this I am going to say
15 evaluation or analysis: "It is known to occur with an
16 elevated rate in children exposed developmentally to
17 lead," what is your basis, the scientific literature
18 basis for that?

19 A. It is cited in the two articles that are
20 referenced.

21 Q. And is that also true that your -- the
22 second part of that sentence: "It is within the range
23 of impairments established as consequences of lead
24 neurotoxicity, even at low concentration levels" as

1 well?

2 A. Correct.

3 Q. Okay. So I'm going to --

4 A. So the -- the --

5 Q. Go ahead.

6 A. Sorry, sir.

7 Q. No, please, go ahead.

8 A. No, yes, that's correct.

9 Q. So, let's look at those papers, and I want
10 you to show me the sections of the papers that you are
11 relying upon for these statements that you make here,
12 okay.

13 So, I can't have both documents up at
14 once, so this is a situation in which, you know, it
15 would be useful if you could keep your report up on
16 your computer and I'll show you the papers or -- or we
17 could do it the other way around.

18 Which is the most efficient way, given
19 that we are doing this via Zoom, for you to show me
20 the sections of these two papers that you say support
21 these two conclusions that you have drawn here?

22 A. I -- I think it's probably easier if I
23 look at the paper separately.

24 Q. So you're going to look at the paper --

1 A. The -- the journal articles.

2 Q. Yeah, on your computer?

3 A. Correct.

4 Q. Okay. Good. Why don't you take the time
5 to do that. Look at the -- look at the Mason, Harp &
6 Han paper first and then I'm going to close this down
7 and then when you find it, you can tell me where it is
8 and I'll bring that up on the screen. Okay?

9 A. Okay.

10 So in the Mason paper, I -- I believe here
11 I'm primarily referencing the Section 3.3 which begins
12 at the end of Page 3 and continues onto Page 4.

13 Q. Okay. So I have it up on the screen here.
14 Let's take a look at that, Executive Functioning,
15 that's the section, 3.3?

16 A. Um-hum, that's correct.

17 Q. So it is: "Decreased executive
18 functioning abilities on switching and inhibition
19 tasks "(Trail Making Tests,)" et cetera, et cetera,
20 "have also been noted in a group comprised of
21 indiveg" -- "individuals with a peak exposure of
22 20 micrograms per gram" of "(tibia bone lead
23 measurement)."

24 But that's not what we have in **EPPI**

1 S[PPI] case, do we?

2 A. That is a higher level than E[PPI] S[PPI]
3 demonstrated.

4 Q. It is -- it is triple, isn't it?

5 A. I would have to check that number.

6 Yeah, it's about three times.

7 Q. So are there any -- is there any
8 scientific literature that support your statement as
9 to developmental lead exposure for E[PPI] S[PPI]
10 besides this paper?

11 A. In the other paper that's referenced,
12 there is a discussion of attention as well. There --
13 this one talks about low levels of -- of exposure
14 based on blood levels and not bone, but there is a
15 cognitive discussion about it on Page 11 of the other
16 paper.

17 Q. Well, wait a sec. Let's stick with this
18 paper for a minute, if you would.

19 Are you saying that Mason, the Mason paper
20 also talks about cognitive impairments or
21 neuropsychological impairments due to low blood lead
22 levels?

23 A. It -- it does.

24 Q. Can you show me that?

1 A. For instance --

2 Q. Go ahead.

3 A. The Section 3.1 which begins on the left
4 side of Page 3, you just scrolled past it, and then
5 continues to the top of that page. It talks about low
6 blood levels. These are blood levels. Again, and I
7 think I have already mentioned that those -- that
8 this -- the neuropsychological literature does tend to
9 mix these two up, but it talks about stepwise
10 decrements beginning at 5 micrograms per deciliter.

11 Q. Right. So this -- this scientific paper
12 that you are referring to for supporting the opinions
13 that you've expressed reports on children who have
14 blood lead levels at 5 to 20 micrograms per deciliter
15 and then later on 5 to 50, but EPPI SPPI has -- the
16 only thing we know about his blood lead level is that
17 it was zero, right, negative?

18 A. It was not necessarily zero. It was less
19 than 3.3 micrograms per deciliter.

20 Q. Well, it wasn't 5, was it?

21 A. I think that that's -- that's -- I am not
22 an expert on blood lead level measure -- measurement,
23 but I think that that is probably within the error
24 rate of that test.

1 Q. Well, you are relying on this paper to
2 establish that some of the symptoms that you
3 ultimately conclude constitute evidence of mild ADHD
4 is based on this paper, but this paper does not study
5 children who have bone lead measurements similar to
6 EPPPI SPPPI nor does this paper report on findings
7 for children who have bone lead level -- bone --
8 sorry -- blood lead levels less than five, right?

9 A. I would have to look through the rest of
10 the paper, but I think that that is correct.

11 Q. All right. Well, let -- let's, if you
12 wouldn't mind, I want to make sure we close the loop
13 on this, see if you could find anywhere in this paper
14 that it reports on children with blood lead levels
15 less than 5 or bone lead levels in the 6 range that
16 EPPPI had reported.

17 MR. ROGERS: While she is doing that, Juliana,
18 did we mark this as the next exhibit? If not, I would
19 like to. What's this number, please?

20 THE COURT REPORTER: No. 8.

21 MR. ROGERS: Thank you.

22 (WHEREUPON, a certain document was
23 marked Mira Krishnan, Ph.D.

24 Deposition Exhibit No. 8, for

1 identification, as of 10/05/2020.)

2 BY THE WITNESS:

3 A. I think that you are correct, that those
4 are the lowest levels that are explicitly mentioned in
5 this paper.

6 BY MR. ROGERS:

7 Q. So let's go to the other paper then,
8 because I wanted to close the loop on that.

9 Which was the other paper? Lidsky?

10 A. Lidsky and Schneider, yeah.

11 (WHEREUPON, a certain document was
12 marked Mira Krishnan Deposition
13 Exhibit No. 9, for identification, as
14 of 10/05/2020.)

15 BY MR. ROGERS:

16 Q. Okay. Would you mind doing what you did
17 before and look at that and find out where there is
18 support in that paper for your statement that A --
19 mild ADHD and the impairments that you found with EPPH
20 SPPI were within the range of impairments
21 established as the consequences of lead neurotox --
22 toxicity, even at low concentration levels?

23 MR. ROGERS: And we'll mark this, Juliana, this
24 will be -- the Lidsky paper will be Exhibit 9.

1 BY THE WITNESS:

2 A. So, one example on this paper is on
3 Page 11. The paragraph on the right column, the
4 fir -- the last full paragraph that begins with
5 "Winneke and colleagues." And I'm sorry, Page 11
6 going by the numbers of the document -- of the journal
7 article, not the page numbers.

8 BY MR. ROGERS:

9 Q. Thank you. Just give me a second.

10 A. It is actually Page 7.

11 Q. Okay. So I'm on Page 7 of 15 and 11 of
12 the -- of the paper.

13 Whereabouts, please?

14 A. The last full paragraph on the right side.

15 So here again, they talk about lower
16 levels, this is a -- is a higher level of blood lead
17 than that is reported for **EPPI**, but the mean is
18 4.3 micrograms per deciliter, meaning the -- the
19 sample had blood level -- lead levels that included
20 the measurement threshold for the test that he took,
21 but, again, the primary finding was impaired
22 attention. That's the sentence after the first
23 sentence, the second sentence.

24 Q. But, again, you know, these all -- these

1 are all blood lead levels where the mean is 4.3 and
2 then the mean later on is eight, so how do these --
3 how does this study support your opinion about
4 inattention having been caused by lead exposure in
5 EPPi -- EPPi SPPI case since his lead -- blood
6 lead level was negative?

7 MS. CARO: I'm also going to object here.

8 Excuse me. I'm going to object because you are
9 assuming that there is no testimony or will be no
10 testimony about the timing of blood lead levels, when
11 they were taken and that sort of thing, so I wanted to
12 interject that.

13 BY MR. ROGERS:

14 Q. Go ahead, please, Doctor.

15 A. That -- that issue of the timing of the
16 lead levels is outside of my expertise, but my point
17 with this article is that the lead levels in this
18 sample are very low. The mean is 4.3 micrograms per
19 deciliter. The upper 95th percentile value is 8.9
20 micrograms per deciliter. Half -- about half of the
21 children in this sample had values even lower than
22 4.3 micrograms per deciliter, and they still had
23 impairments in attention.

24 Q. Okay. And you --

1 A. So this -- this provides general support
2 for the idea that -- that attention deficits are seen
3 at low levels of blood lead.

4 Q. What are the -- what are the other causes
5 of attention issues besides exposure to lead?

6 A. I believe you asked me that question
7 already.

8 Q. I'm not sure. I think I asked you about
9 ADHD in general, but not specifically attention.

10 A. Oh, there are a lot of causes of attention
11 problems. What kind of category are you interested
12 in?

13 Q. The ones that EPPI SPPI experienced.

14 A. I'm not aware of any besides lead in
15 EPPI case.

16 Q. No, no, but I mean -- I'm sorry. I'm not
17 talking about causes. I'm talking about the type
18 of -- I thought you meant that there were different
19 types of inattention?

20 A. I -- I don't think I said that.

21 Q. So my -- my question is, I guess, let me
22 see how to phrase it. What -- what type of
23 inattention is it that EPPI experienced that is
24 similar to the type of inattention that is reported

1 here as part of his attention ADHD diagnosis that you
2 made?

3 A. So, when psychologists use the term
4 "attention" neuropsychologically, they do tend to
5 include both what in the diagnostic criteria for ADHD
6 is referred to as inattention and also
7 distractability, impulse -- impulsivity and -- and the
8 other issues that are in the second set of criteria
9 that you looked at in the DSM-V, but, again, I believe
10 I already answered this, but he was distractible, he
11 lost his focus easily, he needed redirection to
12 complete tasks, he was impulsive, he responded without
13 thinking, he had an elevated activity level. Those
14 are all markers of attentional problems.

15 Q. So with respect to -- to close the loop on
16 this, this -- these two papers, have you now shown me
17 all of the sections of these two papers that support
18 the statements that you made at the top of Page 8 in
19 your report on EPPI SPPI?

20 A. Let me look at the Lidsky paper briefly,
21 please.

22 Q. Sure.

23 A. Let me briefly mention in the Lidsky
24 paper, if I draw your attention to Page 9 by the

1 paper's numbering, which is Page 5 in the document.

2 Q. Yep.

3 A. On the right-hand side the second full

4 paragraph begins: "The effects of lead."

5 Q. Um-hum.

6 A. And so there it discusses some of the

7 pathophysiology, the destruction of dopaminergic

8 functioning which is normally involved in not only

9 motor control but also attention, memory and executive

10 functioning, can produce a host of behavior problems

11 including attention deficit, hyperactivity disorder,

12 as well as cognitive impairments, and so -- and -- and

13 then this is all being discussed again in the context

14 of developmental lead exposure.

15 Q. Okay. Thank you for that.

16 Anything else?

17 A. And then there is one other place.

18 So, if you look at Page 12 in the -- in

19 the page numbering which is Page 8 in the document,

20 this is in reference to -- sorry. I think you are not

21 on the right page.

22 Q. Which one is it, 10 in the document or --

23 A. Sorry. Now I lost it.

24 Page 12 in the document, which is Page 8

1 of the PDF file. Journal articles are page numbered
2 in a kind of strange way.

3 Q. I think I have it now, yep.

4 Okay. So the paragraph that's at the
5 bottom of your screen that begins: "Long-term
6 follow-up."

7 A. Yep.

8 So this discusses -- this does discuss
9 children with very high blood lead levels, but the
10 part that I want to draw your attention to is that --
11 so these children had inferred or measured high blood
12 lead levels, but -- and in the author's note in the
13 middle of the paragraph that the blood lead level was
14 actually only known for 25 percent of the exposed
15 cohort, but then at the bottom of the paragraph, at
16 the time of evaluation, blood lead levels of both
17 groups were low, the exposed group was 2.9 micrograms
18 per deciliter and the control group was 1.6. And the
19 exposed group performed significantly worse on each
20 test of cognitive functioning.

21 And you see, again, executive functioning
22 is the area that would include things like attention,
23 is singled out there.

24 The reason I bring this up is that these

1 groups, at the time of the study, like in -- this is a
2 follow-up after lead exposure, they demonstrated that
3 the -- that impact can still be seen with very low
4 blood lead levels that were lower than would have been
5 detected by the study that was done in EPPI case.

6 Q. Yeah, but that was in the -- the control
7 group as referred to at the time of the testing that
8 was done, they had those blood lead levels, but they
9 were -- the cohort had already had blood lead levels,
10 you know, 30, 40, in the 50s, right? I mean, they
11 were -- they were already --

12 A. Right, those were -- those that were
13 mentioned.

14 Q. Yeah, they already had massive lead
15 toxicity beforehand, before the testing was done?

16 A. That's correct.

17 Q. Okay. Anything else in this article?

18 A. I think that that's it for this article.

19 Q. Okay. Thanks. I'll close that out for
20 now and stop sharing the -- well, I've got to go back
21 to your report here, so let's pull that up for
22 Mr. SPPI.

23 Oh, not that one. Sorry.

24 I'm going to ask you some questions about

1 your recommendations beginning on Page 8 that I now
2 have up on the screen.

3 You -- you can still see that, my screen?

4 A. I can, yes.

5 Q. All right. So, going back to EPP
6 SPPI diagnosis of mild ADHD, is there -- in terms
7 of treatment or recommendations for assisting the
8 child who is diagnosed with mild ADHD and being able
9 to perform in school and other activities, what are
10 those? I mean, you must -- you must get involved in
11 that in your -- in your clinical practice, what are
12 those things that are either compensating mechanisms
13 or treatment or even medication or describe for a
14 patient who has mild ADHD who is nine years old, what
15 would the treatment plan be?

16 A. There are -- there are a few options, and
17 oftentimes several of these are used simultaneously.

18 Medications are considered a relatively
19 primary mode of treating ADHD symptoms in the children
20 in this age range. Those are typically -- I'm not a
21 prescribing physician, but generally speaking, those
22 are options like treating with stimulants, like
23 Adderall or Concerta.

24 Q. Okay. That -- that was medications.

1 Anything else? I asked sort of the broad question
2 there?

3 A. You did. So the -- with very young
4 children we recommend psychotherapy as the first line
5 intervention. Usually we recommend it as a sole or
6 first line intervention for children under five. It
7 remains relevant for children in this age range.
8 Psychotherapy would be used to treat -- teach children
9 things like monitoring tools, using way -- external
10 references or other kinds of tools or knowledge to
11 better regulate their attention, teaching them
12 planning and organizational skills and other things
13 that they can use to compensate for ADHD.

14 Q. Anything else?

15 A. And then if you see in my report, Item 1
16 under Recommendations, I said that there may not be a
17 clear indication for an individualized education in
18 school at present, but there is an increased
19 likelihood that he would require one in the future,
20 and I outline in that first recommendation the kinds
21 of things that that individualized education plan
22 would consist of.

23 Q. Okay. Anything else in terms of treatment
24 for someone with mild ADHD?

1 A. Other than that we generally recommend
2 structured social activities, we -- we talk about --
3 as a psychologist I talk about children's need to
4 coregulate, meaning that we -- we all and children in
5 general and adults in general learn to regulate our
6 activity level, our attention and focus, our emotions
7 based on other people that we are in an environment
8 with.

9 In my experience, children with ADHD
10 symptoms often do well by learning how to function
11 around other children in structured activities, like
12 team sports or Scouts or something like that.

13 Then the other thing, sometimes we
14 recommend parent training. Oftentimes that is part of
15 psychotherapy. And then, finally, in the clinic it
16 wouldn't be uncommon for me to make lifestyle
17 recommendations, good diet and nutrition, reducing
18 food that is high in refined carbohydrates or sugars,
19 because those things cause volatility in children's
20 energy that can worsen these symptoms, consistent
21 sleep schedule, like we would make those kinds of
22 recommendations as well.

23 Q. Do you know if any of EPPPI SPPPI -- if
24 his pediatrician or any of his treating physicians of

1 any type have ever made a diagnosis of mild ADHD?

2 A. In reviewing the -- the written -- the
3 pediatrics notes that I reviewed are all of the ones
4 that are discussed in my evaluation. I am not aware
5 that -- that pediatrics had made that diagnosis for
6 him.

7 Q. And similarly, with respect to his
8 schooling, as a -- as you mentioned earlier, to date
9 at least or to date -- to the date that you did your
10 evaluation of him, the testing, you are not aware of
11 any IEP plan having been implemented for him.

12 Is that right?

13 A. I -- I was not aware of that at the time
14 that I saw him.

15 Q. In terms of these recommendations -- or
16 the -- the regimen or the range of treatments or
17 compensatory type things for someone with mild ADHD
18 who is nine years old like him, do you know whether
19 any of those have been considered or implemented by
20 the parents in consultation with any doctors or
21 educators or others?

22 A. I'm not aware of them having done any of
23 that.

24 Q. Do you know the extent to which those

1 treatment modalities or options that you described
2 have success, that is, in what percentage of patients
3 do the -- the treatment modalities that you described
4 result in improvement in the patients with mild ADHD's
5 functioning?

6 A. So, generally speaking, my understanding
7 is that stimulant therapy is fairly effective. I -- I
8 don't have exact numbers in front of me, but I want to
9 say that the rate of children responding to a first
10 stimulant trial positively is in the order of 60 to
11 80 percent of children.

12 Q. Hmm. What do -- what is a stimulant
13 trial?

14 A. This is using medications that -- that
15 treat ADHD like Concerta or Adderall.

16 Q. Are those --

17 A. Or Vyvanse.

18 Q. -- you are not a -- you are not a medical
19 doctor.

20 Am I right that that -- that the
21 consideration for whether or not to use medication in
22 a nine-year-old child who has mild ADHD, that's for a
23 doctor to decide, right, a medical doctor?

24 A. That's for a medical doctor to decide.

1 Q. And do you know whether that's been
2 considered or not for EPPI SPPI ?

3 A. To my knowledge it was not considered
4 before I saw him.

5 Q. How about after?

6 A. I -- I don't have any information about
7 his interactions with doctors after I saw him.

8 Q. In -- in your experience, is it common,
9 uncommon, frequent, infrequent for children with mild
10 ADHD of the type that EPPI has who are nine years old
11 to receive medication?

12 A. It is fairly common for them to receive
13 medication. It's also fairly common for these kinds
14 of symptoms to come to clinical attention around this
15 age. The reason being that prior to about third
16 grade, in my experience, younger children, they don't
17 have a lot of independent work, so speaking generally,
18 they don't have a lot of homework, they don't -- they
19 are not asked to read long passages by themselves,
20 they don't have a lot of independent work in the
21 classroom. Oftentimes when those start -- demands
22 start to increase around this age, there is a
23 significant increase in ADHD symptoms.

24 So clinically, probably the two times that

1 I see children most commonly referred for ADHD
2 evaluations are around four or five when they are
3 entering preschool and around this age when they are
4 hit -- when they are reaching a grade around third
5 grade.

6 Q. Okay. Given what your diagnosis is for
7 **EPPI** **SPPI**, would you expect that to the extent his
8 ADHD was caused by developmental exposure to lead that
9 if he is not exposed to lead anymore, the symptoms
10 would lessen or diminish or go away?

11 A. So, I think that it's fair to say that, if
12 my diagnosis is correct, which I believe it is, then
13 if he is no longer exposed to lead, I would expect
14 that over time his bone lead levels would very slowly
15 decline, his blood lead levels would remain -- would
16 be negative, and I would expect the contribution of
17 the lead to resolve and for his functioning to
18 improve.

19 Q. To what extent --

20 A. I don't -- I'm not sure I'm able to give
21 you a specific degree or a timeframe for that, but I
22 would expect that general course.

23 Q. So the extent to which he has mild ADHD
24 now and the symptoms that you found through your

1 testing or your evaluation or your interview, as long
2 as he is not exposed to lead going forward, you would
3 expect those symptoms to diminish, right?

4 A. So, I would expect the severity in general
5 to diminish, although it's common in the context of
6 ADHD for there to be an increased visibility of
7 symptoms in certain kinds of situations. That, again,
8 is -- is why I previously mentioned that I commonly
9 see referrals around the start of preschool and around
10 this grade level.

11 Q. Well, but it then -- all right. I guess
12 we'll leave it at that.

13 Let's turn to your Recommendation section
14 and I'll -- we -- I have that up on the screen now.

15 Can you see it?

16 A. Yes.

17 Q. So I want to get to this point here. You
18 talk about he's -- how he: "Is functioning
19 intellectually in the normal broad range. He has the
20 cognitive capacity to succeed...he at present has
21 fairly normal academics in my standardized testing,"
22 such as his math, et cetera, although they do --
23 his -- his impulsivity and lack of attention appear to
24 limit his performance slightly, you say.

1 And you -- there you go on to say you
2 don't think that he at the present is in immediate
3 need for an IEP plan.

4 But this section here where you say: "But
5 it is common for milder cases of ADHD not to be
6 apparent in school functioning until late elementary
7 school," you already mentioned that, I think, "and
8 there is a 25-50% chance that **EPPI** will need an IEP in
9 the future, to provide accommodations," et cetera, et
10 cetera.

11 What -- what's that number based on?
12 Where do you get that 25 to 50 percent figure from,
13 Doctor?

14 A. It is a broad-range approximation based on
15 my clinical experience working with children with
16 similar symptoms.

17 Q. So in the Bibliography that you prepared
18 there are no scientific papers that we could -- you
19 could point me toward to saying that somebody with a
20 mild ADHD would have a 25 to 50 percent chance that
21 he'd need an IEP in the future?

22 A. I am not aware of one to point you to to
23 provide that specific answer.

24 Q. Well, I -- I -- that's a -- I just don't

1 understand where you came up with that -- that number.

2 Are you saying that in your practice you
3 have kept records which would establish that for the
4 patients you see with mild ADHD at this age, there is
5 a 25 to 50 percent chance that they will need an IEP
6 in the future?

7 A. I've followed children at this age with
8 similar symptoms, and that is an approximate
9 representation of the number of them that have gone on
10 to have IEPs.

11 Q. Well, do you have any, you know, specific
12 databases where you have, you know, a database of here
13 are all of your patients that you've seen for mild
14 ADHD that you've diagnosed and then you've followed
15 them going forward into the future and that you have
16 the data that shows that 25 to 50 percent of them
17 needed IEPs?

18 A. I do not.

19 Q. It's a -- it's a guess, isn't it?

20 A. It is an estimation.

21 Q. But, I mean, it's an estimation based on
22 what? You don't -- how many -- how many patients have
23 you treated or -- and diagnosed over the years who
24 have had mild ADHD?

1 A. I don't have a specific number, but it's
2 in the hundreds, at least.

3 Q. Okay. In the hundreds.

4 How many of them have gone on later to
5 have IEPs put in place?

6 A. A significant number of them that I
7 estimate to be on the order of one out of four to one
8 out of two of them.

9 Q. But how do you know that if you don't keep
10 the data? I mean, it's just -- where is the data that
11 would establish that?

12 A. The number is based on my clinical
13 expert -- experience.

14 Q. Okay. To the extent that you've had
15 patients in your clinical practice where IEPs have
16 been put in place to assist, what is the extent to
17 which the IEPs when put in place have helped the
18 patient -- the students perform better?

19 A. They are usually helpful.

20 Q. Usually meaning more than half the time?

21 A. I think that that's very fair.

22 Q. And then at the -- the next statement is
23 that you make there: "His appropriate placement is in
24 a mainstream classroom."

1 He is in a mainstream classroom now,
2 right, or at least when you saw him?

3 A. When I saw him, it was the summer, but I
4 believe he was in a mainstream classroom before that.

5 Q. Before that. Thank you. Okay. That's
6 right.

7 And your estimate there, there is some
8 chance, probably also 25 to 50 percent, that he will
9 require future tutor support of about one hour a day.
10 What's that based on?

11 A. That, again, is based on my general
12 experience with these -- with patients with similar
13 symptoms. I don't have a database to provide you a
14 number for that, but I think that it's reasonably
15 likely. I don't think that there is a 100 percent
16 chance that he would need that service, but I think
17 that there is a significant chance that he would need
18 that service.

19 Q. Okay. I want to ask you about some other
20 statements that you make here in Paragraph 2 about
21 getting a diploma and so on.

22 So you say here: "While IQ at the current
23 age is not completely predictive of long-term outcome,
24 individuals at this intellectual level are generally

1 able to graduate from high school with a diploma."

2 What does "generally" mean?

3 A. Meaning that children with this IQ level
4 are well represented among children who graduate with
5 a diploma.

6 Q. But at what percentages? I mean, what's
7 "generally" mean? Is it 50 percent, 90 percent,
8 95 percent, what?

9 A. I don't have a percentage for that, but
10 EPPi full scale IQ was 99. That is an average
11 score. What I can say is that his IQ in and of itself
12 would not be a predictor that would raise concern
13 about his failure to graduate from high school.

14 Q. All right.

15 So then you say: "However, there is an
16 elevated risk of high school dropout-even mild ADHD
17 increases this risk 2-3 fold (Fredriksen, Dahl,
18 Martinsen, et cetera [sic], 2014), to a risk of about
19 10-15% versus 5% in the general population?"

20 So let me just understand this before
21 we -- we get to the study.

22 In the general population, are you saying
23 that someone with a 99 IQ has -- only about 5 percent
24 of those folks don't go on to graduate from high

1 school and get a diploma?

2 A. If I remember correctly, that -- that is
3 not based on a specific IQ level, but that's a more
4 general statement.

5 Q. So, is it that what you are referring to
6 here is that in the general population -- well, I
7 don't know what -- I -- you explain it to me. I'm
8 not -- I'm not following.

9 For someone with mild ADHD, are you saying
10 that for people who have been diagnosed with that
11 ailment that there is a 10 to 15 percent that they
12 will not graduate from high school?

13 A. Yeah, it's a -- they graduate -- they
14 graduate from high school -- they -- they drop out of
15 high school or fail to graduate with 2 to 3 times the
16 frequency of the -- of non-ADHD comparisons.

17 Q. So in the general population of non-ADHD
18 comparisons, 5 percent of kids don't graduate high
19 school, is that right?

20 A. I think that that's correct.

21 Q. And -- and what you are saying is these
22 studies that you -- we are going to look at in a
23 minute that you are going to show me, there is an
24 increase to 10 to 15 percent of kids who have mild

1 ADHD of non-graduation, right?

2 A. Correct.

3 Q. But that means that with -- there is a 90
4 to -- or an 85 to 90 percent rate for kids with mild
5 ADHD that do graduate from high school, right?

6 A. Correct.

7 Q. Okay. Can you -- can we -- can you find
8 in that study where it is that these numbers are, and
9 also, while we are at it, is that where you get the
10 number above the 25 to 50 percent chance of dropout at
11 the post secondary level?

12 A. I was not able to find a good specific
13 quantitative statistic for that and so that number is
14 based on my experience.

15 Q. Well, wait a minute. So --

16 A. And is an -- is an approximation.

17 Q. So there is not any scientific study
18 that -- and database that you can point me to that
19 says that there is a 25 to 50 percent chance of
20 someone with mild ADHD dropping out of college?

21 A. I have been able -- there are papers that
22 point out the risk, but I'm not aware of a good
23 specific estimate for you, and so this is an estimate
24 based on my expertise.

1 Q. Well, I'm -- yeah, but on what database?
2 What do you mean your expertise? What's the -- what's
3 the scientific data for it?

4 A. Again, I -- whenever I have access to
5 specific scientific results, I use them. When I don't
6 have access to specific scientific results, I go off
7 my own clinical experience working with this
8 population.

9 Q. So, again, and I ask you, do you have a
10 database that you could point me to of all of the
11 patients that you've seen who have mild ADHD and
12 you've followed them over the course from when you've
13 treated them up through the time that they go to
14 college and you're able to report statistics that show
15 that 25 to 50 percent of them don't make it through
16 college?

17 A. I do not have such a database.

18 Q. So how could you make this estimate? What
19 is it based on? It is a guess, isn't it?

20 A. It is an estimation.

21 Q. But -- but what's the database that it's
22 based on? You just said that you don't have the data.

23 A. I have the experience seeing the patients,
24 but I don't have a database to draw a specific

1 quantitative number from.

2 Q. All right. So for that number, 25 to
3 50 percent, as the number reported earlier, 25 to
4 50 percent, those are your estimates based on your
5 clinical experience, not any database or scientific
6 literature that you are aware of in the -- in the
7 field of neuropsychology or others, or things, right?

8 MS. CARO: Objection; asked and answered
9 argumentative.

10 BY THE WITNESS:

11 A. That's correct.

12 BY MR. ROGERS:

13 Q. Okay. Let's look at the Fredriksen, Dahl,
14 Martinsen paper. Do you have that handy? And I'll
15 pull it up on the screen, and you can point me to the
16 section that supports that statement that you made
17 there.

18 It is this one here? I'm sorry, Doctor.
19 Could you look at the screen. Is it this one here,
20 Fredriksen?

21 A. Yes, I think that that's the right
22 article. It is in the abstract.

23 So they talk about ADHD symptom severity
24 on a continuum and they do refer to high levels of

1 symptom severity. I did characterize it as clinically
2 mild, but diagnosable ADHD is -- is -- I consider to
3 be significant in and of itself.

4 Q. But -- but where is the -- where are the
5 numbers that you referred to me that there is a three
6 times higher amount of non-graduation rate?

7 A. It is at the end of the partial paragraph.
8 It is on -- it is on your screen.

9 "High levels of ADHD symptom severity in
10 childhood were related to dropping out of high school
11 [odds ratio (OR) = 3.0]." That's what an odds ratio
12 is.

13 Q. Okay. Where -- where did you refer to the
14 significant or level of severity of the ADHD patients
15 that are included in this group, this cohort that was
16 studied?

17 A. Just a moment.

18 So, they used a test, this is in the
19 odds -- this is in the regression analysis that's in
20 Table 3 on Page 95.

21 Q. Yeah.

22 A. They used a different measure than I used.
23 They used the WURS-25, which, I believe, is a German
24 measure. But, and so I attempted to draw an analogy

1 from that to the measurements that we have available.

2 And so if you see the WURS category that
3 is high, the adjusted odds ratio is 3.

4 Q. So what -- so which test that you
5 administered or which criteria that you evaluated
6 would be comparable to the WURS, W-R-S (sic)?

7 A. The hyperactivity index in the -- the
8 hyperactivity index in the BASC.

9 Q. How do you know that they are
10 comparable --

11 A. B-A-S-C.

12 Q. How do you know that they are comparable
13 for saying that using this paper that focused on the
14 WURS for a threefold increase versus the BASC
15 information that you used?

16 A. The -- the -- the WURS scale, The Wender
17 Utah Rating Scale, is described on Page 90 of this
18 report.

19 Q. Um-hum.

20 A. And they explain their quartiles and I
21 used the percentile data from the BASC as a comparable
22 index.

23 Q. Okay. Are you aware of any studies like
24 this paper that we're referring to now that used the

1 BASC scaling as a -- and use it in an analysis of the
2 potential for increased rates of dropping out of high
3 school for kids with ADHD?

4 A. I am not.

5 Q. The -- the WURS sample, WUR -- The Wender
6 Utah Rating Scale data that's reported here in this
7 table, Table 3, is that in the range of mild ADHD,
8 severe, moderate, what? It's all what they are
9 reporting is that the -- the incidence, the threefold
10 increase in dropping out of high school is in the high
11 range, right?

12 A. Yeah. My understanding is that all -- all
13 clinically significant ADHD would be in the high
14 range.

15 What complicates answering a question like
16 this is that you can't do a study of whether
17 nine-year-old children have dropped out of high school
18 because nine-year-old children don't drop out of high
19 school. This is a retrospective study looking at
20 people who had ADHD in their childhood and assessed
21 them when they were adults, which is why they used the
22 Wender scale, which is a retrospective ADHD scale.

23 Neuropsychologists don't have time
24 machines or crystal balls, so we are not able to go

1 into the future or into the past in an explicit kind
2 of way. In some alternate world where we could travel
3 through time, we would travel through time and see
4 what happened to a child like EPPI. Because we can't
5 do that, we have to compile information from a range
6 of sources, one of which is retrospective analysis of
7 adults who have ADHD as raised as children.

8 Q. So in terms of your estimates that you
9 made based on your clinical practice, getting to this
10 time machine travel issue that you just correctly
11 pointed out, during what period of time is it that you
12 are referring to that you've had patients in your
13 clinical practice that had ADHD when they were nine
14 years old and then you know what happens to them in
15 high school?

16 A. I typically -- I do -- do not typically
17 follow children all -- all of the way from nine to
18 their mid adult years, but I have seen a cross-section
19 of -- of youth and young adults and I have worked with
20 a number of young adults who have ADHD histories.

21 Q. But is that -- I'm -- I'm asking you for
22 the timeframe, is the clinical practice in your
23 experience that you rely upon on which to make your
24 estimates that you described earlier from 2015 through

1 now when you've been in your private practice?

2 A. I -- I am using my experience all
3 throughout my training and -- and my practice at Hope
4 Network and -- and in private practice.

5 Q. Okay. Let's see if there is anything else
6 we need to finish up with EPPI SPPI here.

7 Oh, yeah, the last -- let me go back to
8 that report.

9 The last sentence here, do you have it up
10 on your screen?

11 A. Yes.

12 Q. "There is an" -- "There is, overall, an
13 increase" -- "also an increased risk of working below
14 EPPI potential, such as preventing success in a
15 skilled vocation, (that is, reducing his work to
16 simple, unskilled work below his potential if his
17 attention and impulsivity issues were not a concern)."

18 What's the basis for that statement?

19 A. That's based on my general experience with
20 this population clinically as well.

21 Q. So, again, you know, what's the data? Do
22 you -- do you have data on the amount of your patients
23 that you've seen clinically over the years who have
24 had mild ADHD who then when they get into their

1 working life have a higher percentage of working in
2 unskilled labor versus, you know, the general
3 population?

4 A. In my experience working with adults with
5 ADHD, it's extremely rare that they work in skilled
6 populations, but -- but there are some that I have
7 seen who have worked in skilled populations -- in
8 skilled settings.

9 Q. Okay. But -- so what you are saying
10 though is that that's -- that's at the stage where an
11 adult is in the work -- you know, in his -- in his
12 employment life, not -- let me -- bad question.

13 What you are saying is that people --
14 patients -- people who have ADHD when they are adults
15 and they are working have a higher rate of working in
16 unskilled job -- jobs than people -- people who don't
17 have ADHD, right?

18 A. People who have ADHD histories.

19 Q. Going back to nine years old?

20 A. Typically that's the age range at which
21 ADHD is diagnosed.

22 Q. I know. But you already said that, you
23 know, with treatment and some of these other
24 modalities and since it was caused by, in your

1 opinion, developmental lead exposure, that you would
2 expect the symptoms to diminish over time, right?
3 In -- in EPPI SPPI's case?

4 A. I would expect some diminishment. And, in
5 general, ADHD patients also diminish over time.

6 What the Fredriksen paper shows is that
7 although symptoms diminish over time, there is still
8 adverse outcomes. Although educational interventions
9 are effective, there are still frequently adverse
10 outcomes.

11 MR. ROGERS: Okay. Let's take a five-minute
12 break. We are making decent progress. I know this
13 is -- you know, it is just painstaking to go through
14 all of the data with you, so why don't we take a, you
15 know, five-minute break, we'll continue on.

16 The next thing I'm going to ask you about,
17 Dr. Krishnan, is -- and we are going to do this in the
18 same order for each of the plaintiffs, I'm going to go
19 through the report and ask you questions about what's
20 in the report and your conclusions and then I'm going
21 to go into the actual underlying test data that we --
22 that you have and I'll ask you some questions about
23 that.

24 So, just as a preview, next thing we are

1 going to look at is EPPPI SPPPI test data, okay,
2 and interview forms and all of that stuff.

3 THE VIDEOGRAPHER: Off the record, 2:16 p.m.

4 (WHEREUPON, a recess was had
5 from 2:16 to 2:23 p.m.)

6 THE VIDEOGRAPHER: Back on record, 2:23 p.m.

7 BY MR. ROGERS:

8 Q. Okay. Doctor, like I said, we are going
9 to go through the underlying test data, the tests that
10 you conducted and the interviews and things, the
11 information you got for EPPPI SPPPI.

12 What's this page here? Is this a summary
13 sheet of the testing that was done?

14 A. So, first of all, you earlier stated that
15 my test results were not in my reports, but that is
16 incorrect. The tabulated test results are in each of
17 the reports. That section is called Test Results
18 Comma Tabulated.

19 You requested the -- the raw data, the
20 protocol forms. This sheet that you are currently
21 looking at is the summary sheet I used during the data
22 track, which tests I'm doing in what order.

23 Q. I think you misunderstood what I said.
24 What I said is, yes, we have the test results, but we

1 need the normative scoring criteria. That -- that's
2 what we are looking for.

3 A. Okay. The normative scores are also in
4 the report.

5 Q. I know the normative scores are in the
6 report, but the -- the scoring criteria or sheets that
7 describe, you know, how you got to the -- the scores
8 that you did are not included. For example, a
9 particular score of this number, what does that mean
10 on the -- the test result.

11 Do you understand what I am saying?

12 A. I'm not sure I do, but if you can show me
13 an example, I'd be glad to address it.

14 Q. Well, let's do that when we go through the
15 individual test reports.

16 So this first one is, as you were saying,
17 a summary of all of the tests that were administered,
18 right?

19 A. Correct.

20 Q. And so, for example, let's take this WISC,
21 the Wechsler Intelligence Test. Well, let's go
22 through this a little bit differently.

23 Is this your handwriting on the form?

24 A. It is my handwriting.

1 Q. And the order here is the order in which
2 these tests were administered?

3 A. Correct.

4 Q. Is there any particular reason for doing
5 it in an order -- in this particular order?

6 A. There are multiple reasons. Most
7 neuropsychologists, in my experience, have a
8 preference order of doing testing. Sometimes there
9 are certain tests that are done early in a battery
10 because they change the test plan for the remainder of
11 the battery, and then there is certain tests that
12 are -- that are separated from other tests in a test
13 battery in order to minimize interference of one test
14 on the results of another test.

15 Q. Okay. So that's the why -- those -- in
16 combination, that's the reason you did these tests in
17 this order that you described?

18 A. Correct.

19 Q. And then it says down here something that
20 you talked about earlier is the timeframe: Hours with
21 neurologist face-to-face, 8:45 to 12:00.

22 Does that include the interviews that you
23 did with the parent -- parents or parent?

24 A. I think it does not in this case. I think

1 that the interviews started at 8:00 and this is --
2 this is referring to the testing.

3 Q. All right. So these -- this sheet here
4 doesn't give the scores, right? It just gives the
5 order in which they were done and which tests, the
6 boxes that you checked off, right?

7 A. I am providing that as a courtesy in case
8 the neuropsychologist you retained wants to understand
9 the order in which the tests were administered,
10 correct.

11 Q. Yeah, no, I'm just asking, they don't
12 retain the results, that's all I'm asking, right?

13 A. No. The results are in the report.

14 Q. Right.

15 So let's go to -- what I'm trying to get
16 at in terms of how you scored these, let's use this
17 WISC as our first example, and I'll explain to you
18 what I'm talking about and hopefully that will help
19 you understand what I'm talking about.

20 So, this first page --

21 MR. ROGERS: Oh, by the way, Juliana, we'll make
22 this as Exhibit 9, is that right?

23 THE COURT REPORTER: Exhibit 10.

24 MR. ROGERS: Ten. Thanks.

1 (WHEREUPON, a certain document was
2 marked Mira Krishnan, Ph.D.
3 Deposition Exhibit No. 10, for
4 identification, as of 10/05/2020.)

5 BY MR. ROGERS:

6 Q. Is there any reason why in these forms you
7 didn't put the child's name, the examiner's name, the
8 test date, the birth date and all of that kind of
9 stuff?

10 A. These forms, in my experience, are
11 intended in some cases to be used individually or in a
12 one-off basis. What I do in my clinical practice is I
13 have a folder full of all of the tests for a child and
14 I just keep them together and I -- I don't fill out
15 all of that information on the forms because it does
16 not change anything.

17 Q. So, for this test, there is a standard
18 sort of battery of tests that are contained within the
19 WISC-5, right?

20 A. Correct.

21 Q. And they are all listed here on the side
22 in -- in terms of subtests, right?

23 A. Correct.

24 Q. So what I was getting at in terms of the

1 scaled score is there is, for this subtest, the Block
2 Design, the raw score that was recorded was 22 and
3 then there is a scaled score number, the 10.

4 How did you convert, what normative type
5 scaling conversion did you use to get the score -- the
6 raw score of 22 down to a scaled score of 9?

7 A. It's the -- in the case of a WISC, this is
8 an age-corrected scaled score. It is -- it is part of
9 the WISC test kit.

10 Q. I see. So when you -- when you then take
11 the scaled scores and you total them all up and you
12 report the end result, what is the normative test
13 scaling that you used for that?

14 A. So, do you mean -- so, first of all,
15 the -- this -- the terms that -- the numbers that are
16 referred to as scaled scores, I should explain that
17 they have an average of 10 and a standard deviation of
18 3. So the average -- the 50th percentile of the
19 population approximately scores 10 and the -- one
20 standard deviation on either side scores from 7 to 13.
21 The index scores that are slightly below where you are
22 on this screen at present are -- have an average of
23 100 and a standard deviation of 15.

24 There are historical reasons for why these

1 scores are scored this way. But, again, the index
2 scores are computed from the sum of scaled scores
3 using the test kit.

4 Q. Well, that's what I mean. So where is
5 the -- the information? Where can I find in these
6 documents the information that you just described
7 about what the scaled scores are and the standard
8 deviation and all of that stuff?

9 A. The scaled score -- the standard scores
10 are immediately below on the page. The VCI and FRI
11 and full scale IQ, they are in the boxes marked
12 "composite score."

13 Q. But, I mean, yeah, I know they are -- I
14 know they are listed there, but I guess I'm not -- for
15 some reason we are having a -- a miscommunication
16 here.

17 The -- what you do on this score sheet is,
18 when you get down to this level, for verbal
19 comprehension, you just add up all of those numbers
20 for verbal comprehension that are reported up above,
21 right? And then you get the scaled score. But where
22 are -- where are the -- where are the documents that
23 describe how you convert a full -- the scaled scores
24 and the composite scores to a full scale sum of the

1 scores and then the IQ, the full scale IQ?

2 A. They are part of the Wechsler Intelligence
3 Scale for Children test kit.

4 Q. Okay. So is there a different Wechsler
5 Intelligence Scale test kit for children or is there
6 just one?

7 A. There are -- if I understand that
8 correction correctly, there is -- there are -- so this
9 is one kind of IQ test. There is a version of this --
10 there is a variant of this IQ test for preschoolers,
11 there is a variant of this IQ test for school-aged
12 children, which is this one, and then there is a
13 variant of this test for adults.

14 Q. Okay. So what I'm -- what I'm trying to
15 get at is that you've given us the scores and you've
16 then done the sum of the scaled scores and the
17 composite score and you end up, for full scale
18 intelligence, of this one of 99 for EPPI SPPI.

19 But what I don't see, I don't have the
20 test kit that shows, you know, these conversions for
21 how these are done for this particular age group of
22 kids aged nine.

23 So where -- where do we go to find that?

24 A. You would have to obtain a Ph.D. in

1 psychology and then purchase a WISC test kit from the
2 publisher.

3 Q. I see.

4 So what you are saying is that if I were
5 to -- if -- let me ask it this way just so we -- I
6 don't want to misunderstand each other.

7 If -- if I were to consult with my expert
8 neuropsychologists and I were to say to them, Okay,
9 help me understand and figure this -- this information
10 out here, they could go to the standard WISC-V test
11 kids for which category, young adults?

12 A. The WISC-V is the test for children.

13 Q. Okay. Thank you. So this --

14 A. If --

15 Q. Go ahead.

16 A. If you have --

17 Q. Go ahead.

18 A. Sorry.

19 If you -- if you consulted a
20 neuropsychologist and they looked at this test
21 protocol, they could add up the raw scores, generate
22 the scaled scores and generate the index scores using
23 the Wechsler test kit themselves, yes.

24 Q. I see.

1 So these -- the -- the -- they could take
2 these same numbers that you've determined here to be
3 the raw score and then what the scaled score is and
4 then they could input it into the program and it would
5 come out with the -- the final -- the full scale IQ
6 and the full scale down here, right?

7 A. Yes, I believe so.

8 Q. All right. So, at any rate, in terms of
9 the full scale intelligence for EPPPI SPPI [REDACTED], you --
10 you have described that earlier, it was 99, in the
11 average range, right?

12 A. Correct.

13 Q. So, in -- in terms of these -- all of the
14 writing on these going to this page that I'm on now,
15 14 of 129, this is all your handwriting here, right?

16 A. That's my handwriting.

17 Q. So where -- where is the actual test
18 results for the WISC-V that EPPPI SPPI [REDACTED] completed?

19 A. There is no document that the patient
20 completes excepting, if you scroll down further, there
21 is a test that the -- the child writes on that I will
22 show you.

23 Q. Okay. But it is --

24 A. It is after this section.

1 Q. It is not in the WISC-V? Or it is?

2 A. It is in the WISC-V.

3 Q. I see. So I'll just continue to scroll
4 down to it.

5 So all of these tests, basically up until
6 the point we are at here is the child is taking the
7 test but you are recording what the responses are?

8 A. Correct.

9 Q. Is it a -- is it a test on paper or is it
10 a computer-generated test?

11 A. This particular test?

12 Q. Yeah.

13 A. It's a -- it uses -- it uses physical
14 stimuli. It is not on a computer.

15 Q. Okay.

16 A. Or at least I did not administer it on a
17 computer.

18 Q. So where is the one where the -- the child
19 actually filled out some of this?

20 A. It is a one-page document. It should be
21 immediately after this one in the file.

22 Q. The letter-number sequencing tests that
23 are on here, is this -- did -- was this test actually
24 performed or are these just random numbers here?

1 A. Those are optional tests. That's what the
2 form looks like when it hasn't been filled out. I did
3 not administer that test.

4 Q. Right. How did you go about determining
5 which portions of the test you administered versus
6 which ones you didn't?

7 A. So, in general, I make this decision based
8 on my clinical expertise, my review of the broad
9 neuropsychological literature, my prior consultation
10 with other neuro -- with other psychologists.

11 In the case of the WISC, the full scale IQ
12 requires the first seven subtests and those are the
13 ones I typically administer.

14 Q. I see. So then after the first seven it
15 would be basically discretionary based on the
16 examiner's, you know, analysis?

17 A. That's like the WISCs are used by
18 individuals other than neuropsychologists.

19 Stop here, please.

20 Q. Yeah.

21 A. Those -- these tests are -- these tests
22 are sometimes used by people who complete no other
23 testing besides the -- the WISC.

24 In the case of neuropsychologists, what we

1 typically do is something called a flexible battery
2 approach. We compose a battery that is built together
3 from different tests that are validated to answer
4 different kinds of questions. It's common in my
5 experience for neuropsychologists to not use every
6 subtest of a test like the WISC. In fact, I don't --
7 I cannot name a neuropsychologist who would administer
8 every subtest of the WISC.

9 Q. So is this the page you wanted me to stop
10 at, because this is the one that he actually filled
11 out himself?

12 A. If I understand your correct -- question
13 correctly, and certainly you can consult with a
14 neuropsychologist that you have retained to clarify
15 this as well, but the way that the -- the WISC test
16 works, the only part that requires EPPI, in this case,
17 to write anything on a piece of paper is the test of
18 coding, which is the one that is on the screen right
19 now.

20 Q. So what does this mean, tell me how this
21 works.

22 A. This is a test of processing speed, and so
23 just above where you are on this screen, there is a
24 code of special marks that go with different numbers.

1 You have to scroll up a little bit
2 further. There it is.

3 Q. I see.

4 A. So the child is given a set amount of
5 time. And, again, I -- I want to be clear that I --
6 there are test security issues here and I have
7 concerns about you, being a non-psychologist,
8 reviewing the raw data. Typically our professional
9 organizations recommend that I would have sent this
10 material to your consulting psychologist and if you
11 wanted an explanation of it, you could get it from
12 them.

13 But this is a test of processing speed.
14 The child is given a set amount of time to rapidly do
15 a simple task, in this case transcribing these codes.

16 Q. Okay. It looks like we are at the next
17 one.

18 What is the WRAT-5?

19 A. That test is a test, it's a WRAT -- WRAT-5
20 stands for Wide Range Achievement Test. It is a test
21 of academic achievement.

22 Q. Okay. And I have the same question for
23 you here. Where -- where are the -- where can I find
24 the norms, meaning, you know, how do you convert the

1 raw score into a standard score and, you know, that it
2 ultimately gets to the grade equivalent?

3 A. The answer is the same. The test
4 publisher includes it as part of the test kit.

5 Q. So --

6 A. And it is available to any psychologist.

7 Q. Right. So the same thing, with respect to
8 this one, if my neuropsychologists have the WRAT test
9 kit, you've provided the information by which they
10 could put these scores in and come up with the same
11 analysis, right, based on the actual results?

12 A. Correct.

13 Q. So did you find -- what were the results
14 of the WRAT testing with respect to E[PPI] S[PPI], and
15 I'm looking at Page 7 of your report?

16 Oh, I'm sorry --

17 A. So, they are --

18 Q. Doctor, sorry. Excuse me. One thing. I
19 forgot to ask you this question.

20 You know, in terms of the diagnosis that
21 you made of E[PPI] S[PPI] was that he had ADHD. Is
22 there anything about his test results in the WISC-V
23 that were evidence that formed part of the basis for
24 the diagnosis of mild ADHD in him?

1 A. No.

2 Q. Because that -- that doesn't test for
3 that, right?

4 A. Correct.

5 Q. Okay. And so basically the -- the overall
6 final or full scale IQ test, he -- he performed at --
7 the score was a 99.

8 Where does that fit in within the range of
9 scores? You called it average. Tell me about that,
10 for -- going back to the WISC-V?

11 A. It's very close to the 50th percentile.
12 I -- I could look that number up for you, but it's
13 like the 48th percentile or something like that.
14 About half of children do worse and half of children
15 do better.

16 Q. Excellent. Thank you.

17 Okay. Same thing with respect to the
18 WRAT-5, WRAT-5 I guess you call it, where did -- what
19 were the results there?

20 A. They are tabulated on Page 6 of my report.

21 Q. Yep.

22 A. And then they are discussed on Page 4 at
23 the bottom. The -- they were largely normal accepting
24 that when I asked EPPI to do math, he tried a very

1 large number of questions and he got a very small
2 number of them correct. This is mentioned at the end
3 of Page 4 and the beginning of Page 5.

4 Q. What does that mean?

5 A. It can mean a number of things. Sometimes
6 children who are highly motivated will try tasks
7 outside of their ability even though they are not able
8 to do them. What I thought was noteworthy in his case
9 was that he made certain kinds of errors that are
10 sometimes seen in children who have nonverbal learning
11 problems, and those errors are the ones that are
12 described on Page 5 of my report.

13 Q. So in terms of the -- this particular
14 test, what you -- what it arrives at is grade
15 equivalence for the -- for the particular test of the
16 examinee, right?

17 A. That is one of the -- one of the ways of
18 looking at it, yes.

19 Q. Because I'm looking at your summary of
20 the -- of the tests here and it says, you know, word
21 reading, 97 is the score and it is a grade equivalent
22 of 3.0, math computation, 86, grade equivalent of 2.5,
23 sentence compilation, 95, grade equivalent 3.1.

24 So those are basically all within the

1 range of where EPPPI SPPPI was when you saw him,
2 right, after the third grade?

3 A. Correct. The -- the math computation is
4 psychometrically low average. A scaled score of 86 is
5 about one standard deviation below average, but
6 it's -- it's not a score that we consider impaired.

7 Q. Okay. What's the next test, the G -- oh,
8 did any of these -- did any of the results of this
9 test form part of the basis for your opinion that he
10 has mild ADHD?

11 A. The only thing is the impulsive errors on
12 the math testing.

13 Q. Okay. Thank you.

14 What's the GPT?

15 A. Grooved Pegboard Test.

16 Q. Hmm. And tell me --

17 A. It is a test of motor dexterity.

18 Q. Okay. And tell me how that was conducted.

19 A. It is a -- it's essentially a test that
20 requires a person to manipulate small pegs and place
21 them in a pegboard. It is done one hand at a time and
22 it is a way of comparing -- it's right here -- it's a
23 way of comparing motor dexterity for the -- the
24 dominant and non-dominant hands.

1 Q. And how -- what were the results of that?

2 A. They are on the screen right now and they
3 are also on Page 6 of my report.

4 Q. Yeah. What I meant was on the report.

5 So the pegboard test, what is the -- I
6 don't know what this means, R DOM 83, zero drops, et
7 cetera, et cetera.

8 What -- what are the results in terms of
9 whether it shows any impairment of EPPI SPPI?

10 A. It does not show impairment.

11 Q. So he was -- you know, how is this one
12 scored? Normal? Mean? You know, percentiles? What?

13 How does the -- how does the scoring work
14 on this?

15 A. So the Z score is -- again, this is
16 something that your -- your neuropsychologist would be
17 familiar with, but a Z score has an average of zero
18 and a standard deviation of one. So, scores that are
19 within one standard deviation of average go from minus
20 one to plus one.

21 Q. And his was what?

22 A. Minus 0.6 for his right hand and plus 0.3
23 for his left hand.

24 Q. I see. Thank you for that.

1 So, again, for the -- the way that --
2 there is -- there is a -- a metric, so to speak, for
3 the Grooved Pegboard test that's put out by the
4 creator or the company that created this test that
5 will describe what the Z scores are and what they
6 mean, right?

7 A. In the case of three, I think, tests that
8 I used, the Grooved Pegboard, the Trail Making Test,
9 and the Controlled Oral Word Association, which I did
10 not administer to EPPi, those tests I used norms that
11 are published in a book by Ida Sue Baron that's --
12 that's commonly used for that purpose, and if you'd
13 like, I can -- I can produce that reference.

14 Q. Yes, see, that -- that's what I need
15 for -- if -- if the tests that were done like the WISC
16 and the -- the -- the others where the, you know, kit
17 package, I think you referred to it as, will -- has
18 the norms and all of the scoring information, if you
19 used some type of reference material that's not of
20 that type, I'd like you to tell me about it. So,
21 please, yes.

22 So the Grooved Pegboard, the scoring
23 references you got from some other publication or
24 textbook, is that right?

1 A. Correct. It's a -- it's a classic child
2 neuropsychology textbook that -- that most
3 neuropsychologists have.

4 Q. Excellent. And what's the name of that
5 textbook and -- and the page where I can find this
6 reference, if you have it?

7 A. I don't have it in front of me, but I -- I
8 can give you the name of the textbook.

9 Q. Please.

10 A. I can produce that.

11 Q. Yeah, do you -- do you know what the name
12 is or do you need to take a look at it?

13 A. I -- I need to find it.

14 Q. Okay. So why don't we do that then.

15 MR. ROGERS: I -- I don't need it today or
16 anything, but can we have an agreement then, Louise,
17 as well, that the doctor will get this reference so
18 that I can give it to my experts to figure out, you
19 know, how this particular Grooved Pegboard test was
20 scored?

21 MS. CARO: Sure.

22 MR. ROGERS: Thank you.

23 BY MR. ROGERS:

24 Q. Okay. And what was the other one, Doctor,

1 that you mentioned that is within that same type of
2 category where there was another reference that you'd
3 have to look at to -- to score -- to figure out what
4 these scores mean?

5 A. I used that same book for the next test,
6 the TMT, and then I use it for a test, Controlled Oral
7 Word Association, COWA. I did not administer that
8 test to EPP, but I think I administered it to one of
9 the other bellwethers.

10 Q. Excellent. Okay.

11 So just to go back, the Grooved Pegboard
12 test, we already determined he basically fell within
13 the -- the normal range in that, right?

14 A. Correct.

15 Q. And then the -- the TMT, the trail mark --
16 trail -- that's the Trail Making Test?

17 A. Correct.

18 Q. And that you're going to provide to me the
19 section of that neuropsychology test -- textbook that
20 you used to score this test, is that right?

21 A. I'm going to give you a reference to that
22 textbook.

23 Q. Yeah. I mean, you are going to give me
24 the reference to the textbook, but you are going to

1 refer me in the reference to the section of the
2 textbook where it has the criteria that you used for
3 scoring the trail mark -- Trail Making Test, right?

4 A. If that's what you wish, I can do that.

5 Q. Yes, that's what I'm asking for. I don't
6 know what -- we seem to be having some failure to
7 communicate, probably on my part.

8 I'm just making sure that by the end of
9 this deposition I know and, therefore, my experts will
10 know what you used to score all of these tests that
11 you did.

12 So with respect to -- to just clarify,
13 with respect to this last one, the Grooved Pegboard,
14 there is a section of a textbook in neuropsychology
15 that you used to score this that you are going to
16 provide to me, right?

17 A. I am going to provide you a reference to
18 it.

19 Q. Yeah, but when you use the word
20 "reference," you are going to provide me with the name
21 of the textbook and the page or pages where the
22 scoring criteria that you used that applied to this
23 Grooved Pegboard test is found, right?

24 A. Yes, I can do that.

1 Q. Okay. Thank you. That's all I'm trying
2 to get at.

3 And the same is true with respect to this
4 one, the next one, the trail mark -- Trail Making
5 Test, you are going to do the same thing for that,
6 provide me with the neuropsychology reference textbook
7 and the pages where the scoring criteria are that you
8 used for this test, right?

9 A. It is the same book for the three tests
10 and I can give you the page numbers for each of the
11 three tests.

12 Q. Exactly. Okay. Now we are -- now we are
13 clear. Thank you. That's what I would like.

14 A. All -- all of the other tests that were
15 administered were scored using the test kits or
16 manuals, and so these are things that your
17 neuropsychologist would have available to them.

18 Q. Okay. As long as -- that's true as long
19 as I make sure we know which, you know, is it for the
20 children or which version of it you used, so let's
21 make sure we do that.

22 Okay. Were there any abnormalities or --
23 in the Trail Making Test results for EPPI SPPI ?

24 A. So, this is really not an appropriate way

1 to review neuropsychological test results. As your
2 neuropsychologist has probably also told you, we never
3 evaluate tests in isolation. We look for patterns
4 across a battery of tests that sample all of the major
5 test areas.

6 I can tell you the scores that are
7 impaired and I can tell you what I think they mean,
8 but this is not the way that a neuropsychologist would
9 do this.

10 Q. Well, were any of the scores impaired on
11 this test?

12 A. Yes, the -- the Trail Making A score was
13 impaired in the test and that's discussed in the
14 report.

15 Q. Okay. Show me in the -- your report where
16 that is that -- to what extent it was impaired?

17 A. In the middle at Page 6 is the tabulated
18 test result. The Z score is minus 1.3.

19 Q. And what was --

20 A. And this is discussed at --

21 Q. Go ahead.

22 A. Sorry?

23 Q. Go ahead.

24 A. And then this is discussed at the second

1 full paragraph on Page 5, he did relatively more
2 poorly on an usual -- easy visual scanning and
3 sequencing test, TMTA.

4 Q. But I -- what -- the -- the summary on
5 Page 5 does not match up with the summary under the
6 TMT that you are reporting.

7 Why don't you just explain to me what
8 these numbers mean? A and B are the two different
9 tests, right?

10 A. Correct.

11 Q. And then the next reference is zero --
12 does that mean zero error, zero ERR?

13 A. Correct.

14 Q. And then the Z score is 1. -- minus 1.3.

15 So his was that -- he made zero errors in
16 the normative Z score is minus 1.3?

17 A. The normative Z score is based on the
18 time, not the number of errors.

19 Q. Oh, I see.

20 So was -- so what was his score?

21 A. 38 seconds with a Z score of minus 1.3.

22 Q. And -- and where does that fall within
23 the -- you know, the expected scores?

24 A. That's minus 1.3 standard deviations below

1 average.

2 Q. I see.

3 A. That's a typically accepted cutoff for
4 impaired.

5 Q. Okay. And the -- the references to how
6 that Z score is determined is minus 1.3, that would be
7 in this reference textbook that you are going to
8 provide to me?

9 A. This is general knowledge to
10 neuropsychologists.

11 Q. Okay. And then what's the B scores for
12 the B part of the test?

13 A. The B score is within normal limit.

14 Q. Okay. Thank you.

15 Now let's go on to the next one which is
16 the CVMT. What's that?

17 A. It stands for Continuous Visual Memory
18 Test. It is a test of visual memory.

19 Q. Okay. And how did he perform on this one?

20 A. He had generally a pattern of over
21 responding, so he -- this test requires a child to
22 recognize new visual stimuli and discriminate them
23 from old ones. He responded to most everything, which
24 is why the hits and false alarm scores are elevated

1 and why the total score is relatively low but not
2 impaired. He did poorly on delayed recognition, below
3 the 10th percentile.

4 Q. And what does that mean?

5 A. That means that he was not able to
6 remember the information he initially learned after a
7 delay.

8 Q. I see. So is this one of the tests that,
9 because its part -- it would be part of the test kit
10 for this PAR organization, P-A-R?

11 A. That's the publisher. This is -- this
12 test is described at the top, any psychologist can
13 order the CVMT test kit and manuals.

14 Q. So in terms of which -- are there dif --
15 is there only one type of CVMT test that's
16 administered or how is it described so that I can have
17 my guys get the test kit if they don't already have it
18 and figure out how to score this or check the scoring?

19 A. There is only one version, and this is
20 something your psychologist would be able to do.

21 Q. Okay. Thanks.

22 Is there something in the test results for
23 the CVMT that formed part of the basis for your
24 conclusion, the diagnosis of mild ADHD in him?

1 A. In -- I -- no.

2 Q. Okay. Thank you.

3 Let's go to the next one, the CVLT.

4 What's that?

5 A. CVLT stands for, as you can see on the
6 screen, California Verbal Learning Test. The C stands
7 for children.

8 Q. Got it.

9 And so is this one where there is a
10 standard test that's administered for children that
11 you've -- that -- the test that you did?

12 A. It's -- it's the one that's on the screen,
13 yes.

14 Q. So, again, the test package for that test
15 would have this information?

16 A. Correct.

17 Q. Were there any decrements or impairments
18 that you found on -- based on this test?

19 A. On this test the -- the major finding was
20 that he had inefficient learning. He was low average
21 in general on learning trials, but when you add
22 together his ability to learn information over
23 multiple trials, it was impaired compared to other
24 children his age.

1 Q. Where is that reported on the test report
2 form here -- I mean in your report?

3 A. It's tabulated on Page 6 under CVLT-C.

4 Q. Yeah, I know that, but, I mean, which one?

5 A. T 1-5, that T score of 31.

6 Q. I see.

7 Were any of the others besides that one
8 impaired?

9 A. The -- the others were generally low
10 average. My -- we don't consider minus 1.0 to be
11 impaired.

12 Q. All right. The next one is the -- I think
13 the NEPSY.

14 What's that test all about?

15 A. The NEPSY is a neuropsychological battery
16 for children. In principle, you can administer the
17 whole thing and it -- it tests a variety of cognitive
18 domains. In my experience people don't generally do
19 that, but it has a test of a -- sustained attention,
20 auditory attention response, which I administered.

21 Q. So, is that, the NEPSY test that you
22 administered up on the screen now, it begins with this
23 page, Auditory Attention and Response Set?

24 A. That's correct.

1 Q. I see. And is this one also where my
2 neuropsychologist could go and, you know, have -- find
3 the test kit to score this?

4 A. Yes, they could.

5 Q. Okay. So what were the results of this as
6 reported on Page 6 of 9 of your report?

7 A. There was some impulsive responding in the
8 first subtest, but generally speaking, this was within
9 normal limits.

10 Q. Okay. Thank you.

11 The next one is the TOL, Tower of London.

12 Is that different from the NEPSY?

13 A. Yes. It's the Tower of London.

14 Q. I see.

15 So the same thing here. The 2nd Edition -
16 Child Record Form, for 7 to 15-year-olds, there is a
17 test kit where my folks could go and find it and do
18 the same scoring you did, right?

19 A. That's correct, but also in this case the
20 scoring is on the next page.

21 Q. All right. Oh, I see.

22 A. You actually don't really need the test
23 kit.

24 Q. I see. Yeah.

1 Okay. So what were the results of this
2 test?

3 A. That test was also within normal limits.
4 The only observation that was significant for that one
5 was the one that is mentioned in Page 5 of my report,
6 mid paragraph in that paragraph discussing frontal
7 executive functions where he seemed to be stuck on
8 doing a very simple example and then he thought that I
9 had presented the example to him incorrectly and --
10 and I thought that that was more likely to have been
11 intentional lapse.

12 Q. Hmm. Okay.

13 And what -- I'm seeing here on your test
14 scores the underlying data sheet. We are now at the
15 green nonverbal MSVT, but on your test report were --
16 I mean, in your report itself, we are at the Vineland.
17 What's the -- explain to me what's going on here.

18 Is this -- is the Green Non-Verbal test
19 different or part of another test?

20 A. It is the first test that's at the end of
21 Page 5 in the report.

22 Q. Oh, I see. Okay. This just got mixed up
23 in the whole -- thank you. This just got mixed up in
24 the order in which you did them.

1 Okay. What's this test all about, what's
2 it measure?

3 A. It is a measure of effort or validity in
4 testing.

5 Q. And what were the results?

6 A. It did not raise concerns.

7 Q. Thank you.

8 All right. And then let's see if I can
9 find, move on. Oops.

10 Yeah, the Vineland-3. Okay. Is this one
11 where -- tell me how this test is administered,
12 please?

13 A. This test is ad -- administered as an
14 interview, as it says on the screen, so what I -- what
15 the psychologist does is I ask in general and -- and
16 as necessary a more specific questions about a child's
17 independent skills and I make ratings that an --
18 that -- in a --a web-based form.

19 Q. I see.

20 So you have a series of questions or
21 inquiries that you asked of the parents. Is that the
22 way -- or the parent in this case?

23 A. Correct.

24 Q. And those questions or those subject

1 matters that you address with them, where is that
2 found within the Vineland-3 materials?

3 A. In this case it's administered on a
4 computer, and so there is no document I have. It is
5 something that would be available to your -- your
6 testing -- your -- your evaluating -- your consulting
7 psychologist.

8 Q. Yes. So I think what I'm trying to get at
9 here is that there is -- if I'm not mistaken, there is
10 a -- for this one, isn't there at the end of it a
11 section of actual your scores that you -- yeah, okay.

12 Is this it where you -- can you see this
13 now, we are on Page 88 of 129 of this exhibit?

14 A. Yes.

15 Q. So it says here: "Names at least three
16 actions," and your score for that is "2". That --
17 that score that you entered here is 2 based upon the
18 parent's description of what they told you in response
19 to this item that is "names at least three actions,"
20 right?

21 A. So, the way that the Vineland works, the
22 psychologist avoids asking really specific questions,
23 like can your child name three actions. In general we
24 ask more general questions that elicit that

1 information and if that doesn't work, then we ask a
2 more specific question.

3 Q. Okay. So what does a score 2 mean?
4 What -- what's the range of scores that you can put in
5 here?

6 A. This is, again, something that your
7 consulting psychologist would be familiar with, but a
8 2 is a -- is a score that means the person is able to
9 do the task independently.

10 Q. What is the range of scores though, would
11 it be 0, 1, 2, 3, 4? What -- what are the potential
12 scores that you can get here?

13 A. This is, again, a question that your
14 neuropsychologist would know the answer to, but the --
15 the way that these items on the Vineland are scored
16 are 0, 1, or 2 and 0 means that the child is usually
17 not able to do the task. 1 means they are able to do
18 it sometimes or partially and then 2 means that they
19 are able to do it fully.

20 Q. Got it. Okay.

21 So, let's take an example. For No. 44 you
22 were attempting to determine whether EPPi SPPI
23 could write reports or papers, essays of at least one
24 page and you scored a zero because the parents told

1 you he couldn't do that essentially, that is what you
2 learned?

3 A. Correct.

4 Q. I see.

5 So is it -- am I correct that for each of
6 these items what you're -- the way that you go about
7 gaining the information by which you scored, is there
8 isn't a specific list of questions that you asked, but
9 you -- you inquire of the -- of the parent or the
10 parents and then you get a sense of what the score
11 should be based on what they tell you?

12 A. There -- there are different ways to
13 administer this test. That is the way that I
14 administer it. There is an alternative where you
15 actually just have the parent fill this questionnaire
16 out and provide the answers directly, but in my
17 experience it is not very accurate.

18 Q. I see.

19 So the way you did it is, for example,
20 let's pick another one, this one about the phone, 24,
21 "Talks with a familiar person using a phone, etc."

22 You just inquire of them if EPPPI SPPPI
23 could talk on a phone, you know, and he is familiar
24 with the person using it, so on and so forth, and you

1 rated that as a 2, he could do that?

2 A. Correct.

3 Q. I see.

4 Okay. So in terms of -- if -- if my -- my
5 folks could take all of these scores and I thought you
6 had a -- yeah, here it is. This -- is this the sheet,
7 Page 15, where all the scores correspond to those
8 items that we just started to look at?

9 A. Yes, I believe so.

10 Q. All right. And so then down at the end,
11 how -- how do these -- how were these total scores
12 calculated or generated to come up with any specific
13 conclusions?

14 A. The answer is the same as the last several
15 times that you've asked this type of question. To
16 give you a detailed answer, you would have to complete
17 a Ph.D. in psychology and become trained to do what we
18 do, but the brief version is that if your psychologist
19 wanted to recreate the scores, they would use the test
20 material, the test manual or kit from the publisher of
21 the Vineland.

22 Q. I see.

23 And there aren't -- there aren't different
24 variations of this, there is just one test kit for

1 these particular items?

2 A. There -- there are variations, but the
3 variation used is identified on the first page of the
4 report, of the -- of this printout.

5 Q. Okay. Can you show me that, please, just
6 to make sure, is it right up here on this page here?

7 A. Yeah, if you see where it says:
8 "Domain-Level Interview Form Report," any psychologist
9 would know exactly what that means.

10 Q. "Domain-Level" -- so the -- the report
11 form, "Domain-Level Interview Form Report," that's a
12 specific type of format within Vineland-3, 3rd
13 Edition, is that what you are telling me?

14 A. Correct.

15 Q. Okay. And what were the overall results
16 of this or any -- and -- and any conclusions that you
17 drew from the -- from this test?

18 A. This test was normal.

19 Q. Oh, okay. Thank you very much. Let's
20 move onto the BASC-3.

21 I think I just went past it too fast, am I
22 right, this is part of it here? I see.

23 A. I think you are at the -- you are about 18
24 pages into it.

1 Q. Okay. Thank you.

2 While I'm getting to it, why don't you
3 describe what the BASC-3 is intended to get, you know,
4 information about?

5 A. This -- so BASC test or Behavior
6 Assessment System for Children, it is a parent report
7 measure. There are also other forms, like teacher or
8 self report versions, but what it allows for is -- it
9 asks parents about a number of different things that
10 they may or may not see for their children and they
11 rate those things based on how often they see them,
12 like never, sometimes, often or almost always, and
13 then they -- those -- those responses are aggregated
14 into -- I'm sorry. Those responses are aggregated
15 into domain areas, like hyperactivity, or inattention,
16 or depression, and their responses are compared to
17 other parents of children of the same age and then
18 they can also be compared to disorder populations,
19 like children with emotional disorders or children
20 with social disorders.

21 Q. Um-hum. I see. Okay.

22 And so this -- this was a -- a test that
23 you administered to the mom and you did the same type
24 of thing that you did with the Vineland where you

1 raised these subject matters with her or asked
2 questions and then, based on her response, you put in
3 a particular score.

4 Do I have that right?

5 A. No. This is a -- this is actually a
6 parent questionnaire. They use a computer tablet to
7 select the answers.

8 Q. I see. Thank you very much for that.

9 So, there would be -- for this particular
10 BASC-3, where is the information that I could show to
11 my experts where they would know which of these, you
12 know, forms came up on the screen that the mom filled
13 out.

14 Is this one --

15 A. It should be on the last page.

16 Q. Okay. It is not on the first page here at
17 all?

18 A. I'm sorry. Can you say the question
19 again?

20 Q. Yeah, I'm trying to get -- you said so the
21 way this test is administered to the mom, she sits in
22 front of a computer and there is a -- there is a
23 template or a form that comes up and she looks at the
24 questions or the -- the subject matters and then she

1 actually inputs the information into it, it's not
2 something that you do by way of interview.

3 Do I have that right so far?

4 A. That's correct.

5 Q. So what I'm looking for is where is the
6 information about which particular series of subject
7 matters or questions would be presented to the parent
8 that she filled out, where is that reported on this?

9 Are you saying it's right at the end of
10 the document?

11 A. The -- the -- the responses that she gave
12 are on the last page of the document.

13 Q. I -- I get that. So it looks like I'm on
14 it now. There is 175 responses with the scaled
15 scoring, but where -- where do I find reference to the
16 items numbers, like Item 1, what is Item 1?

17 A. You would get that from the publisher.

18 Q. I know, but which -- which version of this
19 BASC-3 parent rating scale would we want to look at to
20 make sure that we have the right items?

21 A. This, again, is a question that your
22 psychologist wouldn't ask, and I apologize, because it
23 would be more obvious to them than to you, because of
24 the nature of their training, but the BASC-3 parent

1 rating scale is the form type and then they would
2 choose the right form based on EPPI age at the time
3 that it was administered, and so there is a version
4 for, in this case for children from age 6 to 11 which
5 is the only version of the BASC-3 parent rating scale
6 that would be an applicable to EPPI.

7 Q. Okay. So I appreciate your patience with
8 me. You don't have to keep saying that my
9 neuropsychologist would know the answers to questions
10 I'm asking you. I -- I assume that to be true, but
11 I'm the one asking you the questions and I need to
12 have an understanding of it despite your earlier
13 comments about, you know, normally you only give this
14 information to neuropsychologists.

15 So I appreciate your patience. I think
16 we've now covered it. I just wanted to make sure that
17 we had a record at the end of the day of what tests
18 you administered, how you administered them, how the
19 parents filled them out or -- or whatever that we can
20 use to evaluate your overall opinions.

21 So it's clear that if I were asking you
22 questions about the law, you know, you would probably
23 not know the responses as well as Louise would, so
24 enough -- enough commentary.

1 The -- what -- what was your overall
2 conclusion for the test results for the BASC-3 with
3 respect to EPPPI SPPI and the diagnosis of ADHD
4 mild?

5 A. So, I will draw your attention to the
6 beginning of the report. If you go back up to the,
7 let's see, the Page 9, which may be Page 106 in the
8 document.

9 Q. Okay. Thank you.

10 A. I'm sorry. Actually, that's not right.
11 It's further up than that. It's Page 3.

12 Q. Okay. Got it.

13 A. This one.

14 Q. Yep. I'll make a little -- sorry. Bear
15 with me a second. Sorry. There we go. Okay.

16 A. Okay. So this is a -- basically what this
17 does is it takes the questions that the parent has
18 asked and decomposes them into different content
19 areas, and the -- as indicated on the screen, we
20 consider scores about the threshold in the dark gray
21 to be clinically significant, we pay attention to
22 scores that are in the light gray as being at risk,
23 meaning that they're maybe are not clinically
24 significant but they are concerning, and then the

1 scores in white are normal.

2 And so, as you see and in the report also,
3 the hyperactivity index is in the dark gray and at the
4 bottom of the page you see a percentile in the general
5 population indicating that hyperactivity is described
6 as worse than 97 percent of the general population.

7 Q. Okay. Thank you. That's very helpful.

8 So where the black dots appearing on this
9 graph going across from left to right, if you go up,
10 I'll just demonstrate so you know what I'm talking
11 about, I think I do.

12 So for hyperactivity I'm moving the cursor
13 up and the T score, the way this was rated based on
14 the parent's response, that's up in the gray area
15 above 70 and his score, EPPI SPPI [REDACTED] score based on
16 the parent's completion of this test was 72, and what
17 you are saying, that's in the 97th percentile for
18 hyperactivity, right?

19 A. Correct.

20 Q. I see. And then so going across,
21 aggression, the score was 65, T score, that's the 92nd
22 percentile, so that's why it is at risk. I see.

23 At what -- is the 50 -- is this line, the
24 50 going across, is that the 50th percentile,

1 basically?

2 A. Are you still able to hear me?

3 Q. Yes.

4 A. Okay. Sorry about that. My headset went
5 dead.

6 Q. Oh.

7 A. The -- so unfortunately we use a lot of
8 different scoring metrics and I know you don't want me
9 to repeat it, but, again, this is something that your
10 neuropsychologist would be familiar with, but these
11 scores have been --

12 Q. Hold it. Hold it. Is this something that
13 my neuropsychologist would be familiar with?

14 A. It is.

15 Q. Okay. That's what I -- I get it. You
16 don't have to tell me that again. Go ahead.

17 A. The T -- a T score of 50 is -- is average
18 and so, yes, it is at the 50th percentile, but a --
19 the standard deviation is 10 and so a T score of 60 is
20 one standard deviation above average, a T score of 70
21 is two standard deviations above average.

22 Q. So the -- the sections of -- or the -- the
23 components of this test where he was -- EPPPI SPPI
24 was at risk would -- would be hyperactivity,

1 aggression, externalizing problems and somatization,
2 right?

3 A. The -- the externalizing problems is a
4 summary index and so it's computed from the first
5 three items to the left of it.

6 Q. Okay.

7 A. But, so, yes, he -- he was elevated for
8 hyperactivity and then he had borderline levels of
9 aggression and somatize -- somatization. Somatization
10 means a tendency to experience distress via physical
11 symptoms.

12 Q. I see. Okay.

13 Okay. I think that's been very helpful.
14 Thank you. I don't think there is any other data,
15 right, that we see?

16 What does this section of the report here
17 mean where, let's just pick this one, Emotional
18 Control Index, 44, is that Item 44 on the -- on the
19 test materials?

20 A. Correct. So I think that the report that
21 the -- that the system generates gives you items that
22 you might be particularly interested in as a
23 psychologist just so that you can look at them.

24 Q. I see.

1 But, for example, the parents when they
2 were entering in -- in a score for overall executive
3 function here on "Pays Attention," does this mean --
4 does this "Sometimes" mean that's what they wrote or
5 that's what they input?

6 A. Correct.

7 Q. And then from that, if it's "sometimes"
8 there would be a numerical score that's associated
9 with that?

10 A. Correct.

11 Q. Okay. I see. And they are here, yeah.

12 MR. ROGERS: Okay. That's good. Let's take
13 another five-minute break -- actually, no, let's
14 finish this up first.

15 BY MR. ROGERS:

16 Q. Would you -- would you -- because we are
17 pretty much done with EPPI SPPI and we can now turn
18 to our next one, TPPI, but have you -- have you now
19 explained the basis for your opinion that EPPI
20 SPPI, based on your evaluation and the testing and
21 the interviews with the parents, has a mild -- mild
22 ADHD?

23 A. I believe I explained the basis for that
24 already in my report and I stand by my original

1 statement.

2 Q. Yeah, would you just summarize it for me
3 to make sure we have it before we leave EPPI SPPI?

4 Basically tell me what's -- what's the
5 basis for your opinion based on all of the work and
6 evaluation that you've done that he suffers from mild
7 ADHD?

8 A. His parents reported symptoms that were
9 consistent with ADHD. When they filled out a
10 questionnaire that is validated by comparing them to
11 parents of other similarly aged children, they
12 endorsed very high levels of hyperactivity.
13 Hyperactivity and impulsivity were also evident in my
14 testing of EPPI and they are seen in multiple settings
15 as the ADHD criteria generally require, and so, based
16 on the core -- the consistency between the parent
17 report, the questionnaire report and the testing
18 results, I made a conclusion of ADHD.

19 Q. Thanks.

20 MR. ROGERS: Let's go off the record for five
21 minutes and we'll turn to TPPI next. Thank you.

22 THE VIDEOGRAPHER: Off the record at 3:24 p.m.

23 (WHEREUPON, a recess was had
24 from 3:24 to 3:33 p.m.)

1 THE VIDEOGRAPHER: Back on record. 3:33 p.m.

2 BY MR. ROGERS:

3 Q. Okay. Dr. Krishnan, turning to the
4 plaintiff A[PPI] T[PPI], am I saying it right, is it
5 A[PPI] T[PPI]?

6 A. Yes, I believe that's correct.

7 Q. Okay. So just to get some basic stats
8 like we did with E[PPI] S[PPI], let me bring up her
9 report -- your report on her, I mean, and here it is.
10 Here is the first page.

11 MR. ROGERS: Juliana, let's just make sure, I --
12 I did ask that the underlying data test report for
13 E[PPI] S[PPI] be marked as the next exhibit, right?

14 THE COURT REPORTER: Yes, you did.

15 MR. ROGERS: And so let's mark this report by
16 Dr. Krishnan for A[PPI] T[PPI] as exhibit, what would
17 this one be now?

18 THE COURT REPORTER: Eleven.

19 MR. ROGERS: Eleven. Thank you.

20 (WHEREUPON, a certain document was
21 marked Mira Krishnan, Ph.D.
22 Deposition Exhibit No. 11, for
23 identification, as of 10/05/2020.)

24 BY MR. ROGERS:

1 Q. At the time you did your evaluation, she
2 was 11 years old, she had just completed the fifth
3 grade, right?

4 A. Correct.

5 Q. And she's -- her date -- the date of the
6 evaluation was June 21st, 2020, right?

7 A. Correct.

8 Q. Her date of birth was or is PPI ,
9 2009, right?

10 A. That's correct.

11 Q. I want to direct your attention to Page 1
12 down at the bottom here in terms of the blood lead
13 level that was measured. Similar to what we saw with
14 the SPPI boy, for the TPPI girl, as far as you
15 know, the only blood lead level measurement for her
16 that was ever taken was on January 12th of 2016 and it
17 was reported as less than 3.3 micrograms per
18 deciliter, right?

19 A. To the best of my knowledge. That's the
20 only result I saw.

21 Q. And then for the bone lead scan, that was
22 reported here on the next line, April -- sorry --
23 August 15th, 2019, bone lead assessment
24 9.65 micrograms per gram, right?

1 A. Correct.

2 Q. And as I asked you before -- well, would
3 you -- you would consider APPI TPPI's blood lead
4 level test to be negative, right?

5 A. Correct.

6 Q. Just as you did with SPPI, right?

7 A. Yes. I didn't say negative in this case,
8 but yes.

9 Q. Yeah, that --

10 A. I believe that that's negative.

11 Q. Thank you. That's why I asked, yeah.

12 And then for the bone lead -- or actually,
13 for each of these, either the bone lead -- sorry --
14 the blood lead level or the bone lead level, you don't
15 know what the averages are for someone who is age 11
16 at these times when these tests were done, right,
17 nationally?

18 A. You -- you showed the blood lead levels on
19 the screen earlier in the deposition, but, no, I -- in
20 general I only considered them against
21 neuropsychological evidence of impairment based on
22 levels. So the answer is the same.

23 Q. Yeah.

24 For the period of time that the TPPI girl

1 was drinking the water or not drinking the water, I
2 think we covered this before, that's -- whatever
3 information you have about that is contained in your
4 report based on a dis -- a summary of what is in the
5 mother's deposition testimony, correct?

6 A. Correct, unless it was in one of the other
7 report documents, in which case I mention it there,
8 but I don't think that it was.

9 Q. Right. So, am I correct that there --
10 there isn't, at least from your evaluation and your
11 summary of the information provided by Ms. TPPI, that
12 there wasn't a definite stop date for when she stopped
13 drinking the water?

14 A. That was my understanding in reviewing the
15 deposition.

16 Q. And you had mentioned that that was
17 because Ms. TPPI reported in her deposition that, you
18 know, that her daughter continued to drink tap water
19 or hose water, stuff like that, out of the spigot
20 outside, right?

21 A. Correct, and I believe she also reported
22 that they attempted to get a filter but it was not
23 compatible, I believe, with their home.

24 Q. Yep. So, but in terms of the amount of

1 lead that the T[PPI] girl had in her bones, same with
2 respect to S[PPI], what that means is that that's a
3 cumulative -- it is a measurement of the cumulative
4 lifetime lead exposure of her up until the point in
5 time at which the test was done, right?

6 A. Yes, that's correct.

7 Q. Okay. So let's -- let's go to the
8 report -- your report at the end where you have your
9 diagnosis and we'll do the same. What we'll do is try
10 to go through this in the same order that we did with
11 S[PPI], and I think it will move more quickly now
12 that I understand the test documents better and now
13 that you won't have to tell me that I don't understand
14 them as well as you or the expert -- my experts, so
15 hopefully this will go quickly now, a little more
16 quickly anyway.

17 So your diagnosis for A[PPI] T[PPI] is, as
18 I've highlighted here: "Overall, my diagnostic" --
19 "primary diagnostic impression is neurocognitive
20 disorder (G31.84) -- .84 -- "and mood disorder (F39)
21 resulting from lead exposure."

22 Right?

23 A. I believe if you are intending to share
24 your screen you are not currently sharing your screen.

1 Q. I'm -- I'm sorry. I will do that, yeah.

2 Actually, I -- I had intended to share my
3 screen before when I highlighted other sections of
4 your report. So let -- let me just go back and do
5 that so I can show it.

6 So when I was referring to the blood lead
7 levels and the bone lead levels, that -- that wasn't
8 on the screen before?

9 A. Correct.

10 Q. All right. Well, I'm going dough go back
11 and do that then just so we have it.

12 A. Sorry.

13 Q. There they are -- thank you. No, that's
14 all right.

15 There they are on the first page, these
16 two highlighted sections. There is the negative blood
17 lead level and then the 9.65 for the bone lead, right?

18 A. Correct.

19 MS. CARO: And I'm just going to point out again
20 the same as I did as the other one, that are you
21 assuming that there is going to be no other testimony
22 or there has been no other testimony about lead
23 levels. I just want to get that on the record.

24 BY MR. ROGERS:

1 Q. So, with respect to the diagnosis that you
2 have of neurocognitive disorder, I noted that in some
3 of the other plaintiffs you rated it as either, I
4 think, mild for both, when we get to them for
5 V[PPI] and W[PPI], but with respect to T[PPI], is
6 it -- did you not rank the severity level for some
7 reason or -- or explain that to me? You just have
8 neurocognitive disorder.

9 A. I apologize. I -- that was an oversight,
10 but it would be a mild neurocognitive disorder.

11 Q. Okay. Thanks.

12 Yep, and I think that the G31.84 code from
13 the DSM is actually mild, right?

14 A. I -- I think that that is correct.
15 There -- if I also will admit to my flaw, there is an
16 alternate DSM diagnosis, neurodevelopmental disorder.
17 The two are overlapping. In prior editions there was
18 no neurodevelopmental disorder. It might have been
19 better to use that diagnostic code, but the meaning is
20 the same in this case.

21 Q. What -- what edition of the DSM-V -- DSM-V
22 has the developmental diagnoses?

23 A. It -- the DSM-V does. The -- the -- the
24 DSM-IV, I believe, did not.

1 Q. Oh, I see. Okay.

2 So you are saying that there -- there is
3 another -- in retrospect looking back on it, you could
4 have selected mild neurocognitive developmental
5 disorder as the diagnosis based on the DSM-V?

6 A. The term is a "neurodevelopmental
7 disorder."

8 Q. I'm sorry.

9 A. And I would have to look up the ICD code
10 for that. The distinction is neurocognitive disorder
11 is typically used when a person has a acquired injury
12 that causes a loss of thinking skills, and -- and that
13 applies to this case, in -- in my opinion, but the
14 term "neurodevelopmental disorder" is also often used
15 even when the source is acquired, if it happens during
16 child development, and so sometimes the -- in this
17 kind of case the neurodevelopmental will all -- always
18 be used instead of neurocognitive, but otherwise the
19 meaning is the same.

20 Q. Is the diagnostic criteria the same?

21 A. It is.

22 Q. Okay.

23 A. Excepting that -- excepting that
24 development is in question. So if -- if -- I'm not

1 going to assume your age, but if you went out and had
2 an acquired injury that caused a loss of your
3 thinking, it would always be diagnosed as a
4 neurocognitive disorder, but if you had that loss when
5 you were younger, when you were a child, then it might
6 of -- it would be -- it could also be called a
7 neurodevelopmental disorder instead.

8 Q. I wasn't able to find this Code F39 for
9 mood disorder in the DSM-V or anywhere else.

10 Where -- where does that come from?

11 A. It may be a mistake. I can -- I can look
12 in the DSM-V. The -- the -- I was attempting to use
13 the -- the general category for mood disorders, but it
14 may be that that code is wrong.

15 Q. Yeah, I would like you to do that because
16 I need to -- I want to know what, you know, your
17 intentions were in terms of this coding in the mood
18 disorder for the diagnostic criteria.

19 So could you -- do you have one handy, do
20 you have your DSM-V book handy or do you --

21 A. I do.

22 Q. Do you have it electronically or -- I -- I
23 happen to have the hardcover book in my hand here.

24 Do you have it -- the book or do you have

1 it electronically?

2 A. I have it electronically. So I will
3 search.

4 Q. Well, why don't you do that --

5 A. And I can get it probably --

6 Q. Go ahead, you -- you search for that, and
7 while you are doing that, I'm going to bring up the
8 DSM-V diagnostic criteria for mild neurocognitive
9 disorder and we'll look at that.

10 A. Okay.

11 Q. Let's -- so you are looking for mood
12 disorder, F39 is the code.

13 MR. ROGERS: And Juliana, we'll make this the
14 next exhibit which -- boy, I don't know why I can't
15 remember the numbers. Is this 13?

16 THE COURT REPORTER: It's 12.

17 MR. ROGERS: Okay. Thank you.

18 So this is the DSM-V criteria for Mild
19 Neurocognitive Disorder.

20 (WHEREUPON, a certain document was
21 marked Mira Krishnan, Ph.D.
22 Deposition Exhibit No. 12, for
23 identification, as of 10/05/2020.)

24 BY THE WITNESS:

1 A. To answer your earlier question, I believe
2 the code should have been F32.9, which is Unspecified
3 Depressive Disorder.

4 Q. And you don't happen to have a -- a
5 reference to a page number in the DSM-V that I can
6 find that, do you?

7 A. In the version that I have, it's on
8 Page 184.

9 Q. Okay. That's where I have it.
10 Unspecified Depressive Disorder F32.9, I
11 see. Okay. Well, we'll -- I'll see if I can get that
12 scanned and marked when we get to it, but let's --
13 let's start with Mild Neurocognitive Disorder first.

14 Okay. Do you see that up on the screen?
15 This is now Exhibit 12.

16 A. I do.

17 Q. So, it says here, and I want to understand
18 this carefully or correctly with you. In order for a
19 diagnosis of mild neurocognitive disorder to be made
20 under the DSM-V criteria, which is what you did,
21 Section A here says:

22 "Evidence of modest cognitive decline from
23 a previous level of performance in one or more
24 cognitive domains," and it lists them, and then it

1 says: "Based on concern of the individual, a
2 knowledgeable informant, or the clinician that there
3 has been a mild decline in cognitive function; and a
4 modest impairment in cognitive performance, preferably
5 documented by standardized neuropsychological testing
6 or, in its absence, another quant" -- "quantified
7 clinical assessment."

8 So, explain to me how you used this
9 criteria to make the diagnosis of mild neurocognitive
10 disorder in A[PPI] T[PPI], please?

11 A. So, I have already discussed how I used
12 the DSM-V as a guideline.

13 The difference, again, between a
14 neurodevelopmental disorder and a neurocognitive
15 disorder has to do, and I apologize if I -- I used the
16 wrong term, although I think that my meaning is clear,
17 has to do with the fact that children's brains are
18 developing. So the classical definition of a
19 cognitive disorder, and you see the examples that are
20 listed in your exhibit, are adult examples. So you
21 are an older adult and you develop Alzheimer's disease
22 and you have a loss of cognitive function.

23 It is trickier in children to -- to
24 understand decline because these skills are improving

1 or developing as children age, and so the general
2 understanding of psychologists and neuropsychologists
3 and neurologists and others who work in this area is
4 that we are looking at a failure to achieve gains or a
5 deficit from a likely functioning in the absence of --
6 of the problem.

7 In general, a bare -- a limitation with
8 neuropsychology is that we don't evaluate people who
9 don't think that they have problems very often.
10 People don't file lawsuits if they don't think that
11 they were injured, people don't come to clinical
12 attention if they don't think that they have a problem
13 either. And so, in general, neuropsychologists use a
14 variety of ways of estimating the likelihood of
15 decline from expected functioning.

16 And so the primary way for children is the
17 use of age-corrected scaled scores and -- and
18 sometimes also gender-corrected scaled scores or
19 occasionally grade-corrected scaled scores. And as
20 for the A2 criteria, I did standardized
21 neuropsychological testing that demonstrates modest
22 impairment.

23 Q. Okay. But as we established earlier,
24 right, there -- there was not any cognitive --

1 neuropsychological cognitive impairment-type testing
2 that was done on any of these children before you did
3 yours, right?

4 A. With respect to these four children,
5 that's correct.

6 Q. So how was it that you were able to
7 determine that there was a decline from some point in
8 time to another point in time -- well, the other point
9 in time being when you did your test, testing and
10 evaluation?

11 A. So, the alternatives that we use are
12 things like looking at the general intellectual level
13 as an estimation of where a child should be and
14 comparisons to other children who are like the child
15 in question, so other children who are of the same age
16 and so on.

17 Q. So when did you come to the real --
18 realization that your diagnosis of mild neurocognitive
19 disorder was not the correct one or not the most
20 appropriate one for T[PPI], in particular, and does that
21 also apply to the other children that we'll get to,
22 v[PPI] and w[PPI]?

23 A. It apply -- it would apply to -- so -- so
24 what I can tell you first is that psychologists -- in

1 my experience psychologists and psychiatrists in
2 clinical practice don't view the DSM-V as a purely
3 authoritative source, meaning it is not the be all and
4 end all of these diagnoses, but we use them in the way
5 that they are commonly used in the scientific and
6 treatment literatures.

7 Beyond that, I -- I -- to answer your
8 question, I came up -- I came on the realization in
9 the last couple of weeks as we've been having
10 interdisciplinary conversations about diagnosis in --
11 in a clinic that I participate in.

12 Q. Okay. So, where would I find the
13 diagnostic criteria for mild developmental cognitive
14 disorder? And am I -- am I saying it right? I want
15 to make sure I get it right.

16 A. I think you are not. Let me -- let me see
17 if I can find it.

18 Q. Is it in the DSM-V?

19 A. Yes. It...

20 Q. It looks like there is neurodevelopmental
21 disorders with F codes 70 through 89.

22 A. Yeah. Yeah. That -- that would be the --
23 the area. The -- the -- probably the appropriate one
24 would be the one that used to be ICD-9, 315.9, and I

1 can find you the -- the F -- the ICD-10 code is F88.

2 Q. So that says here Global Developmental
3 Delay, is that right?

4 A. Let me -- let me see if I can find it.

5 It's used in more than one place, and so
6 it -- it's also used as an Other Specified
7 Neurodevelopmental Disorder. It's the same code as
8 used for Global Developmental Delay and also Other
9 Specified Neurodevelopmental Disorder.

10 Q. Yeah, but I'm not really interested in the
11 code necessarily. I -- I'd like to find the
12 diagnostic criteria, because I understand that you are
13 saying that DSM-V is more of a guideline or a guide
14 than, you know, the be all and end all, but up until,
15 you know, a half an hour ago, we were working on the
16 assumption that your diagnosis was mild neurocognitive
17 disorder for these remaining three plaintiffs, and now
18 you are telling me that some other diagnosis would be
19 more appropriate, I guess.

20 If so, I -- I need to know whether or not
21 there is any diagnostic criteria that you employed so
22 as to now determine if that's the better, more
23 appropriate diagnosis?

24 A. As I'm looking at the DSM, I think that

1 that diagnostic -- that diagnosis is in the ICD-10 and
2 it is not in the DSM-V, but in essence, the -- the
3 idea is the same, except that because children have
4 developmental cognition, the -- it's not an,
5 necessarily an issue of decline from previous
6 functioning.

7 In my experience, neuropsychologists use
8 the code that I used commonly to describe this kind of
9 problem. When the ICD-9 was being used, the code that
10 they used was 294.9, which I understand to be
11 substantially equivalent.

12 Q. Well --

13 A. So the previous term that we used was a
14 cognitive disorder.

15 Q. Well, let's go through this carefully
16 here.

17 So, are you now saying that your diagnosis
18 for APPI [REDACTED] TPPI is mild neuro -- or mild
19 developmental disorder?

20 A. I had never said that.

21 Q. What is it?

22 A. I -- so, it can be diagnosed -- it -- the
23 condition that I characterized can be diagnosed using
24 either the code that I provided in my report or

1 neurodevelopmental disorder which is -- which is noted
2 in the DSM-V as -- under that F88 code. And the two
3 are used interchangeably in my experience in this kind
4 of situation.

5 Q. But -- but then you added in the further
6 explanation that, with respect to a diagnosis of mild
7 neurocognitive disorder under the DSM-V, that is, this
8 exhibit, there is the requirement that there be, under
9 that diagnostic criteria at least, a modest decline
10 from a previous level performance, right?

11 A. And so, as I explained what
12 neuropsychologists do in this area and what other
13 practitioners in my experience do in this area, is we
14 look at the person's likely trajectory in the absence
15 of the impairment using factors such as their overall
16 IQ in comparison to their domain specific
17 neuropsychological performance or their comparison to
18 age peers who are similar to them.

19 Q. And so what is this ICD-10 diagnostic
20 criteria?

21 A. I believe that we covered this in great
22 detail with EPPi already, but the --

23 Q. No, we didn't. Excuse me. Not for mild
24 neurocognitive disorder we didn't.

1 A. To the best of my knowledge, the ICD
2 doesn't specify specific criteria.

3 Q. Okay. So that's what I'm trying to get
4 at. Where -- where is it that I could find a
5 description of neurodevelopmental disorder which is
6 different than mild neurocognitive disorder in the
7 particular aspect that in neurodevelopmental disorder
8 there is no requirement that there be a modest decline
9 from a previous level of performance?

10 A. It is on -- sorry, it finally just showed
11 up. It is on Page 86 of the DSM-V.

12 Q. Bear with me a second.

13 Do -- do you have an opinion that the
14 plaintiff T~~PP~~PI did have a modest cognitive decline
15 from a previous level of performance?

16 A. I have an opinion that she has a modest
17 impairment in cognitive performance.

18 Q. But not a decline from a previous level?

19 A. I think that that criteria is irrelevant
20 in this age group because the exposure was
21 developmental while these abilities were becoming
22 present. If I -- however, if I return to my report,
23 her emotional functioning was more clearly a change
24 from prior functioning. It was less clear in the case

1 of her thinking -- cognitive skills.

2 Q. So the emotional functioning part of it,
3 that goes to the diagnosis of the mood disorder, not
4 the neurocognitive disorder, right?

5 A. That's correct.

6 Q. Okay. So, if I understand correctly, what
7 you are saying is, as you sit here today as you are
8 testifying under oath, that your diagnosis for
9 APPI TPI with respect to her neurocognitive
10 situation is that the most appropriate diagnosis in
11 your opinion is Other Specified Neurodevelopmental
12 Disorder code, or as described on Page 86 of the
13 DSM-V, as opposed to Mild Neurocognitive Disorder,
14 which is now up on the screen as Exhibit 12.

15 Do I have that right?

16 A. I -- I think that both of these diagnoses
17 are in common use in terms of ICD billing codes for
18 this kind of disorder. I don't think in clinical
19 practice there is a clear preference among
20 practitioners to use one or the other, but if your
21 expectation is that I follow the letter of the DSM-V,
22 which is not in general what psychologists or
23 psychiatrists do, then the F88 code may be more
24 appropriate.

1 Q. Well, I'm not asking, you know, what I
2 expect or anything else. I -- I want to know what
3 your opinion is? So is it --

4 A. My --

5 Q. Let me just try to clarify.

6 Do you -- do you have an opinion that
7 A[PPI] T[PPI] sustained a -- a decline, a modest
8 cognitive decline from a previous level of experience
9 performance or not?

10 A. I have an opinion that A[PPI] T[PPI]
11 experienced a modest impairment in cognitive
12 performance that would not be present had she not been
13 exposed to lead.

14 Q. Okay. And what you are saying is that
15 that diagnosis that you just described doesn't fit
16 squarely within the diagnostic criteria of the DSM-V
17 for Mild Neurocognitive Disorder or Other Specified
18 Neurodevelopmental Disorders, right?

19 A. Yes.

20 Q. So, therefore, is it also true that
21 since -- let me think about that one a little bit
22 more. Maybe I'll ask you a better question about that
23 tomorrow.

24 Okay. Let's get into the bases for your

1 diagnosis that you just described.

2 Can you show me in the report -- or
3 just -- you know what we did at the end of the last
4 one where I asked you to just summarize what your --
5 what the bases were for your opinion about this
6 diagnosis, and I'm not talking about the mood disorder
7 now, we'll -- we'll leave that aside, but the
8 developmental disorder, neurodevelopmental disorder
9 that you are describing.

10 Explain to me, what is the basis for that
11 diagnosis, summarize that, please?

12 A. So, going back to APPI
13 neuropsychological results, which are in the report,
14 she had a normal IQ, although she had a substantial
15 discrepancy between her verbal and her visual
16 reasoning abilities, including the impaired
17 performance on a test of verbal reasoning. She had a
18 different pattern in her academic test results where
19 she had much weaker math than other areas. This was,
20 again, low average and not impaired, but it is an
21 unusual discrepancy between domains.

22 Turning to the remainder of her testing,
23 she had impairments in tests that look at skills like
24 speeded processing, like TMTA, and she had impairment

1 in sustained attention as seen in the NEPSY 2,
2 N-E-P-S-Y, Auditory Attention Response Set test.

3 In talking to her parents, these were
4 consistent with cognitive things that were seen in her
5 real world functioning. And I did make a cognitive
6 disorder on that basis. And I didn't see any of it
7 in -- in the record that problems that correlate with
8 my -- with my cognitive testing findings were in any
9 of the records I had to review from prior to my --
10 from prior to the time period in question.

11 Q. Okay. Is what you are saying, then, you
12 didn't see evidence in her education records or other
13 information that was available to you that would be
14 indicative of any neurocognitive impairments that you
15 found in your testing?

16 A. That's correct.

17 Q. Okay. Now let's turn to the -- and we are
18 going to go through all these tests just like the
19 one -- the last one we did.

20 Let's look at the mood disorder diagnosis.
21 Why don't you describe to me what did you mean by
22 "mood disorder" before we get into the actual DSM-V
23 criteria that you pointed me to.

24 What -- what did -- did you do?

1 A. So --

2 Q. Yeah.

3 A. -- the DSM and the ICD both have disorder
4 diagnoses that have terms like "unspecified" or "not
5 elsewhere classified" in their diagnostic title.
6 These are broadly used and commonly used by clinicians
7 to designate problems that don't fit tightly within
8 the definition of a specific mood disorder.

9 So this would be used, for instance, in
10 cases where a child has mood symptoms that are unusual
11 in the general population, but they don't meet the
12 criteria for major depressive disorder or bipolar
13 disorder or disruptive mood dysregulation disorder.

14 Q. So what are the symptoms that you found in
15 your evaluation of TPPI that led you to make that
16 diagnosis of mood disorder?

17 A. So, when I spoke to APPI mother, she
18 indicated a change in personality after the water
19 crisis. Shy noted that in the time prior to the water
20 crisis her daughter was friendly, maybe even
21 excessively friendly, and after the crisis she wanted
22 to be left alone, she disengaged from other people,
23 which is something that APPI also endorsed. She
24 is moody and volatile, this is on Page 3 of my report,

1 and lacks motivation, even for relatively simple
2 things. Her mother also noticed some defiance or back
3 talking as a problem as well.

4 And then when I had -- when I had her
5 complete the BASC-3 responses, those were consistent
6 and suggested social withdrawal as well as lack of
7 adaptability and some problems with aggression and
8 mood, as well.

9 And she was -- she was cheerful when I saw
10 her, but she is also endorsing some of these problems,
11 you know, based on my understanding from talking to
12 the two of them, and so I did feel that there was also
13 a mood disorder.

14 Q. What type of treatment is available for
15 someone like her who is -- is she -- is she 11, did I
16 remember that right?

17 A. That's correct.

18 Q. So -- yeah, so she just -- had just turned
19 11. She is now, it looks like she would be in the
20 sixth grade now.

21 What type of treatment is available for
22 kids who were her age that have the type of mood
23 disorder issues that you have found in her?

24 A. If she were my patient clinically, I

1 probably would recommend psychotherapy as a mainline
2 intervention. The reason I would make that choice is
3 because she has these symptoms that don't really
4 clearly fit into one of the more common mood disorder
5 diagnoses, like depression or bipolar disorder, and
6 that would generally reduce my confidence level in
7 psychotropic intervention, medication intervention,
8 because medication interventions are often designed
9 based on these really specific definitions of things
10 like depression or bipolar disorder.

11 However, depending on how she did in
12 psychotherapy, it is also common for individuals with
13 these kinds of problems to see a psychiatrist and to
14 do -- to use medications as well.

15 Q. So, to your knowledge, has any of her
16 medical care providers, pediatricians or anyone made a
17 diagnosis of mood disorder before you?

18 A. In looking at my records, I believe the
19 last medical appointment that I was able to review for
20 APPI [REDACTED] was six years before I saw her. I -- I am
21 not aware of any evaluation or treatment for it.

22 Q. Did you -- did you learn of any
23 information from her mother that indicated that any
24 medical professional had made this diagnosis of mood

1 disorder before your evaluation of her?

2 A. I -- I did not.

3 Q. Why -- why is it that the various symptoms
4 that you described to us that -- that you read from
5 your report are not within the normal range of mood
6 variations that an 11-year-old child would have?

7 A. That's a good question.

8 So some degree of -- when it comes to mood
9 systems, some degree of all of what I described is
10 common for children in a variety of ages and even for
11 adults. What we look at are a few things.

12 First, as you were looking at the DSM-V,
13 what you will see in general across diagnostic
14 criteria is that typically each diagnostic criteria in
15 the DSM has an item towards the end of the definition
16 that says that it has to cause clinically significant
17 distress or impairment, or something similar to that.

18 So, in general, psychologists ask if there
19 is a problem that bothers somebody, you know, when we
20 see them. So if you tell me that you have been
21 feeling sad but you think that that's normal and you
22 don't think that it's causing you any problems, I
23 would be unlikely -- and -- and I didn't have any,
24 like, contradicting information, you know, you weren't

1 also failing school or getting kicked out of your
2 social clubs or something like that, then I would be
3 disinclined to diagnosis that as a disorder.

4 In this case, APPI mother did
5 complain about problems for APPI. Both of them
6 endorsed that her social, emotional approach was
7 different than it had been prior to the onset of -- of
8 this mood disturbance. And -- and then I -- the
9 BASC-3 data also corroborated their report.

10 Q. Do you have a cat loose in the house or
11 something in your office, is that that noise?

12 A. I do. If you want to take a quick break,
13 I can move him out of the room. I apologize.

14 Q. No, it's not bothering me. I just noticed
15 you looking around. So I -- it doesn't bother me.
16 Let's -- let's press ahead unless you want to remove
17 the cat from the room on your own.

18 A. I think he'll be fine.

19 Q. All right.

20 A. Sorry about that.

21 Q. So -- so, with respect to the mood
22 disorder diagnosis, do you have your DSM-V handy, and
23 I think you mentioned it appears on Page 184, and
24 that's the same version of it that I have, and I'm

1 wondering if you could point me toward the -- the
2 exact criteria that you applied as a guide, or
3 whatever way you want to describe it, for this
4 particular mood disorder that she has?

5 Because it's got different things in here
6 with, you know, melancholy, anxious, distress, you
7 know, seasonal pattern, psychotic features, and a lot
8 of other things. What -- what is it that you point to
9 for her mood disorder that means that she has this
10 particular unspecified depressive disorder?

11 A. So, as the -- the definition of
12 unspecified dis -- depressive disorder in the DSM-V
13 states, it's a category that is used for individuals
14 who have clinically significant distress or impairment
15 but do not meet the full criteria of the other
16 disorders in the section.

17 And so I -- I have already described to
18 you the emotional mood changes that were of a concern
19 for APPI [REDACTED], and those are the ones that I'm talking
20 about here as well, and they do not meet the criteria
21 for depressive disorder or bipolar disorder or the
22 other specified mood disorders.

23 Q. I see.

24 So the -- the only -- the only section of

1 this DSM-V that you are referring to here is the one
2 under Unspecified Depressive Disorder 311, Code F32.9,
3 that one paragraph that's there, and not anything that
4 starts under the heading Specifiers for Depressive
5 Disorders, right?

6 A. That's correct.

7 Q. Okay. I'm going to take -- let's stay on
8 the record. I'm going to just walk out and see if I
9 can get someone to help me copy and scan this so that
10 we can mark it as the next exhibit. Bear with me. It
11 will only take a minute. Maybe you get -- you can
12 kick the cat out, if you want, during this -- this
13 time.

14 A. Okay.

15 THE VIDEOGRAPHER: Are we going off the record?

16 MS. CARO: No. He said he is just going to step
17 out for a second.

18 MR. ROGERS: No, let's just stay on so we don't
19 lose everybody. I'll be right back.

20 THE VIDEOGRAPHER: Okay.

21 (Short pause.)

22 MR. ROGERS: Okay. So that's being done. Let's
23 continue on here as long as everybody is here still.

24 Do we have Juliana?

1 THE COURT REPORTER: I am here.

2 MR. ROGERS: All right. Great.

3 BY MR. ROGERS:

4 Q. Okay. Turning, Doctor, to the -- the
5 paragraph in your report entitled Conclusions, I'll
6 try to bring this up on the screen here.

7 Okay. Can you see that all right?

8 A. Yes, I can.

9 Q. So: "APPI presents with the complex
10 pattern of discrepant skills across cognitive domains,
11 which are masked by an overall normal intellectual
12 level."

13 What -- what is her IQ?

14 A. It is on Page 5 of the report. It's 103.

15 Q. And is that generally within the 50th
16 percentile area, just like for EPPi SPPI?

17 A. Yes, it is just generally higher.

18 Q. I see. Okay. What is -- this is the
19 first time we've talked about this, the Hanna-Attisha
20 and other authors' paper from 2016.

21 You say: "There is no evidence of these
22 issues prior to the change in the Flint, Michigan
23 water system to the Flint River, and her exposure is
24 consistent with known distributions of lead exposure

1 resulting from the water system change."

2 Explain what you -- and then you refer to
3 the Hanna-Attisha paper.

4 What do you mean by that?

5 A. All I -- I mean in this case is that to
6 the best of my understanding she lived within the
7 locations in which elevated lead levels were reported
8 in the drinking water.

9 Q. I see.

10 Is that -- that's the only thing you meant
11 by referring to that paper?

12 A. In this case, yes.

13 Q. Do you know what -- what the composition
14 of the service line going into the TPPI house was?

15 A. I am not an expert in service lines. I --
16 if I commented on -- I believe that that was a
17 question that was commonly asked in your depositions
18 where -- or whichever attorney performed the
19 depositions. I do not recall if they knew the answer
20 to that question or what the answer was.

21 Q. And is it correct that you're not aware of
22 any actual water lead tests for the -- the TPPI
23 residence where APPI was living at this point in
24 time or the relevant point in time?

1 A. I have not -- I have not reviewed any.

2 Q. And as we just reviewed earlier, you are
3 not aware of any blood lead level tests other than the
4 one that was reported as negative, right?

5 A. That's correct.

6 Q. Okay. So let's go to the next section
7 here which says: "Her impairments in mood and
8 cognition are consistent with the range of impairment
9 seen in exposure to lead."

10 The Lidsky and Schneider paper that we
11 already looked at, and the Mason, Harp & Yan paper,
12 right?

13 A. Correct.

14 Q. So, is there anything in the Lidsky paper
15 that you wanted to point out as the scientific basis
16 for this statement that is in any way different than
17 what you showed me before?

18 MR. ROGERS: Bear -- I'm sorry. Bear with me
19 one second here.

20 (WHEREUPON, discussion was had off
21 the stenographic record.)

22 MR. ROGERS: I want to mark this exhibit that
23 just came in, so bear with me a second here. I have
24 to stop sharing my screen and then we'll do this.

1 So I just want to make sure, somebody tell
2 me, nobody is seeing my screen with my e-mails on it
3 right now, right, I hope?

4 MS. CARO: Nope.

5 THE WITNESS: No.

6 MR. ROGERS: Okay. So I'm going to bring up --
7 I'll re-share my screen and hopefully bring this up.

8 Doctor, just for the record, and is
9 this -- Juliana, what's this going to be, 14?

10 THE COURT REPORTER: Thirteen.

11 MR. ROGERS: Thirteen. Was -- was 12 the T^{PPI}
12 report that we were just looking at, Dr. Krishnan's
13 report?

14 THE COURT REPORTER: Let me look.

15 MR. ROGERS: Thanks. Sorry. I just want to
16 make sure we marked it.

17 MS. CARO: I don't think you did.

18 MR. ROGERS: I'm sorry, Louise. Did -- did you
19 say something?

20 MS. CARO: I don't -- I don't think you did. I
21 don't think you marked it.

22 MR. ROGERS: Okay. Well, then, let's make --

23 THE COURT REPORTER: Twelve -- twelve is the
24 DSM-5 criteria for Mild Neurocognitive Disorder.

1 MR. ROGERS: Okay. Thank you very much.

2 BY MR. ROGERS:

3 Q. Okay. This one will be 13, and it is the
4 DSM-V criteria that you referred me to for Unspecified
5 Depressive Disorder which is on the screen now, right?

6 A. Correct.

7 Q. Doctor?

8 (WHEREUPON, a certain document was
9 marked Mira Krishnan, Ph.D.
10 Deposition Exhibit No. 13, for
11 identification, as of 10/05/2020.)

12 BY MR. ROGERS:

13 Q. I see.

14 So, in the second part of it here, we
15 didn't discuss yet: "The unspecified depressive
16 disorder category is used in situations in which the
17 clinician chooses not to specify the reason that the
18 criteria are not met for a specific depressive
19 disorder, and includes presentations for which there
20 is insufficient information to make a more specific
21 diagnosis (e.g., emergency room settings)."

22 Right?

23 A. That is what it says, yes.

24 Q. I see.

1 So what you are saying is, if I have this
2 correct and can just summarize it, you are saying that
3 A PPI [REDACTED] T PPI [REDACTED] her -- through the BASC testing that
4 you did and the reports of her parent or mom in this
5 case, there was evidence of a mood disorder that was
6 causing distress to her or impairment in social or
7 other important areas of functioning, but that it did
8 not meet the full criteria for any of the other
9 disorders basically, right?

10 A. Correct.

11 Q. I see.

12 And what specifically would a social
13 settings or the things about the way she was
14 functioning socially that were impaired?

15 A. I described it as in response to a
16 previous question, but, again, she withdraw --
17 withdrew socially, she was not engaged with other
18 people as much as she used to be, she kept to
19 herself -- let me go back to that part of my report --
20 where as she had previously been much more friendly to
21 others.

22 Q. Now, let me ask you, though, the period of
23 time that she was reported as having these issues and
24 when you did your examination of her, I mean, they --

1 they obviously to some extent overlapped with the
2 period of time from March when the pandemic started up
3 through, you know, the time that you examined her,
4 right?

5 A. Yes, but they -- the parents told me that
6 they noticed these problems after the water crisis.

7 Q. I know, but to what extent did you take
8 into consideration that the mood disorder and the
9 symptoms that she was experiencing could be explained
10 by, you know, what was going on in the country and her
11 community as of the time that COVID-19 and the
12 pandemic caused all of these major disruptions to our
13 society and her?

14 A. That was not what they reported.

15 Q. Well, was she experiencing the symptoms of
16 mood disorder that you were describing in your report
17 from March of 2020 through the period of time that you
18 examined her?

19 A. Per the family report, she was
20 experiencing them both during that time period and
21 before that time period.

22 Q. Okay. But during the time period from
23 March to -- to June, what did you do to evaluate
24 whether those symptoms were being caused by things

1 that were going on then as opposed to something from
2 before?

3 A. I'm not aware of any psychological tests
4 for a mood disorder due to COVID. COVID has become
5 such a large problem that maybe someone will develop
6 such a test in the future.

7 But first, they were clear to me that
8 there was no fear in engaging with other people, which
9 in -- in my clinical experience since March is one of
10 the primary issues that people have in the context of
11 COVID-19, they -- they told me that in general anxiety
12 and fear were not concerns for APPI at all. They
13 reported that -- rather that for several years she had
14 been less socially engaged.

15 It doesn't make clinical sense for her to
16 have become socially disengaged over the several years
17 preceding COVID in response to the global pandemic.

18 Q. Okay.

19 MR. ROGERS: Then let's now go ahead and mark
20 the next exhibit, which would be 14, the TPPI report,
21 your TPPI report that we are looking at.

22 (WHEREUPON, a certain document was
23 marked Mira Krishnan, Ph.D.

24 Deposition Exhibit No. 14, for

1 identification, as of 10/05/2020.)

2 BY MR. ROGERS:

3 Q. Whoops. Can you see that all right?

4 A. I can now, yes. It was a little difficult
5 for a moment.

6 Q. Yeah, that's for sure. It went down to
7 miniature level.

8 So, I -- I think before we took the break
9 when we -- when I got that document scanned, I was
10 asking you about the Lidsky and Schneider and Mason,
11 Harp papers, right? And I was asking you if there was
12 any additional information in either of those two that
13 we didn't already talk about that would support -- or
14 actually, you know, we need to do this, you know why,
15 because when we were discussing E[PPI] S[PPI], that was
16 for ADHD, not cognitive impairment of the type that
17 you found in T[PPI].

18 So I guess I'm going to have to ask you to
19 show me in the Lidsky paper first where there is a
20 description of evidence that support your opinion or
21 conclusion that you're expressing here that her
22 impairments in mood and cognition are consistent with
23 the range of impairment seen in exposure to lead?

24 A. All right. Bear with me, please.

1 Q. And what I'll do is we'll do the same
2 thing we did before, I'll bring that one up and you
3 can tell me where to find it and we'll put it up on
4 the screen.

5 MR. ROGERS: Juliana, can you help me out, did
6 we -- did -- or somebody -- did we mark this paper,
7 the Lidsky paper before as an exhibit, and if so, what
8 number was it?

9 THE COURT REPORTER: Let me check.

10 MR. ROGERS: Thank you.

11 You know what we need, we need Adam
12 Schnatz on the Zoom conference. He keeps track of all
13 of the exhibits very carefully.

14 THE COURT REPORTER: Sorry. It's taking me a
15 minute.

16 MR. ROGERS: Yeah, my bad, I should have written
17 it down.

18 THE COURT REPORTER: The Lidsky paper is No. 9.

19 MR. ROGERS: Thank you very much.

20 BY THE WITNESS:

21 A. So if you are ready, I wish to draw your
22 attention to Page 11 using the paging number -- the
23 page numbering in the article.

24 Q. Yep, Page 11 in the article, yep.

1 A. So, I previously mentioned the paragraph,
2 the Winneke and colleagues paragraph in response to an
3 earlier question.

4 So, there again, they did talk about
5 attention, but they also talked about other cognitive
6 impacts of lead exposure. And so those also include
7 things like visual perception, visual memory, reaction
8 times. Those were the things that were not affected
9 and attention was affected and -- and we can talk
10 about attention for APPI [REDACTED] and why I thought that
11 was a neurocognitive disorder and not an attention
12 deficit disorder -- or attention deficit hyperactivity
13 disorder.

14 But that paragraph discusses the cognitive
15 impacts of lead more broadly, and there is continuing
16 discussion of the cognitive impacts of lead over the
17 next several paragraphs.

18 Q. I guess what I'm trying to get at is
19 which -- where in this study does it refer to
20 neurocognitive impairment of the type that you found
21 in APPI [REDACTED] that is caused by exposure to low level
22 lead?

23 A. So, first of all, APPI [REDACTED] had impaired
24 performance on Auditory Attention and Response Set,

1 which is a test of sustained attention and response
2 vigilance, and that's one of the areas that is
3 explicitly mentioned in the paragraph I just
4 indicated.

5 Q. Okay. Anything else?

6 A. The Trail Making Test A is also an
7 attentionally modulated measure, and that, you know,
8 again, is already discussed here. The -- the -- --
9 and the Lidsky paper also talks about emotional
10 changes in response to lead exposure.

11 Q. Where is that?

12 A. That is on Page 12, right-hand side,
13 second complete paragraph beginning: "In addition to
14 the evaluation."

15 Q. Okay. So the -- the authors here are
16 reporting that there is an increased incidence of a
17 variety of behavior problems, depression, somatic
18 complaints in lead-exposed children and that increases
19 in aggression were observed at a blood lead level of
20 15 micrograms per deciliter, right?

21 A. I note that is a higher level. Well,
22 there is no blood lead level for APPI [REDACTED] that was
23 positive.

24 Q. Right. So, are you aware of any

1 scientific studies that support the proposition that
2 there are increased incidents of behavior problems of
3 this type that were found in APPI TPI at lower
4 blood lead levels than 15 micrograms per deciliter?

5 A. If I draw your attention to the other
6 paper that we were talking about, the Mason paper.

7 Q. Okay. I guess we could get to that one in
8 a sec. I just want to make sure that there is nothing
9 else in this paper that supports that before we move
10 on to the other one.

11 A. I think that it is -- there is a
12 discussion also of -- the -- the end of that paragraph
13 that we were reading just now, the sentence that
14 begins: "The first prospective longitudinal
15 investigation," that talks about low lead level
16 exposure.

17 Q. But how much? I mean, it says "low lead
18 level exposure" but it doesn't tell you what that is.

19 A. I don't have that in front of me.

20 Q. So you'd have to look at that paper in
21 order to determine what that low lead level exposure
22 was, right?

23 A. Yes.

24 Q. Okay. So does that complete your

1 description of where there is support for your opinion
2 that a mood disorder and the neurocognitive
3 impairments that you've described as having been
4 caused by low lead levels?

5 A. In this paper?

6 Q. Yes, in this paper.

7 A. Yes.

8 Q. Okay. So now we can go to the next paper.
9 So that's what we'll do.

10 I have a -- a series of papers here.
11 Which one was it, the Mason paper or Hou?

12 A. Mason.

13 Q. Okay. So here we have an issue. I don't
14 know why that did that. Ma -- Lidsky came up again.
15 Let me get read of that. Here is Mason.

16 MR. ROGERS: Okay. Now, we haven't marked this
17 one before or have we? I'm sorry, Juliana. I'm a --
18 I'm a mess today on the numbering. I can't remember
19 if we marked this one or not.

20 THE COURT REPORTER: Let me check.

21 MR. ROGERS: I think we did.

22 THE COURT REPORTER: You have not marked -- do
23 you think you did? I think the -- let's see.

24 MR. ROGERS: Yeah, because --

1 THE COURT REPORTER: The Mason, Han paper is
2 Exhibit 8. The Lidsky paper is Exhibit 9.

3 MR. ROGERS: Yeah, so thank you. This is the --
4 this is the Mason paper which is Exhibit 8. I thought
5 we had marked it before. Okay. Great.

6 BY MR. ROGERS:

7 Q. So, Doctor, point me to sections in this
8 paper that support the opinions that you are
9 expressing?

10 A. So, if you look at Page 4, please, there
11 is a Section 3.8 in the lower right.

12 Q. Yep.

13 A. And so here there is discussion of a
14 various -- various emotional changes that occur in
15 response to lead exposure, the second paragraph
16 describes antisocial behavior, aggression and -- and
17 other antisocial behaviors, including a study of
18 resilient adolescents with dental enamel related
19 exposure.

20 Q. But what is the -- what are the numbers
21 with respect to the blood lead levels in these
22 studies?

23 A. I am not sure.

24 Q. Okay. Are you aware of anything in this

1 study that describes these effects at low blood lead
2 levels?

3 A. The -- the end -- at the end -- as noted
4 in the end of the first paragraph, low lead level
5 exposure conclude -- studies of low lead level
6 exposure -- studies of low lead level lead exposure
7 concluded that lead related interpersonal problems may
8 be mediated by irritability and fatigue.

9 Q. Okay. So you'd have to look at the
10 reference footnoted as number -- or Reference No. 74
11 to find out what those low lead level exposures are,
12 right?

13 A. Correct.

14 Q. Well, those -- it seems to me that the --
15 the authors there are reporting on studies of adults.

16 Is there any indication that this
17 paragraph relates to children?

18 A. That is an adult study.

19 Q. Hmm. Okay.

20 Is there anything else in this paper that
21 you wanted to refer me to that supports your opinions?

22 A. We already talked about some portions of
23 this paper, but if I draw your attention to 3.5
24 language, which is on Page 4 on the left, it is in the

1 same place as you just were, it discusses
2 vocabulary -- it discusses similarities between adults
3 and children who had problems with language-based
4 skills, including reasoning difficulty, which is one
5 of the problems seen for APPI.

6 Q. Okay. So in order to determine what the
7 lead levels are, you'd have to go to each one of these
8 studies because this paragraph is basically a summary
9 of various other studies, right?

10 A. Correct. This is a review article.

11 Q. Right. And some of them are for adults
12 and some of them are for children, right?

13 A. Yes, that's correct.

14 Q. Okay. Anything else in this paper that
15 support your opinions?

16 A. I think that we have spoken about
17 everything else already.

18 Q. Okay.

19 Going back to your report for TPPI,

20 APPI TPPI. Whoops. Going to the Recommendation
21 section.

22 A. Would you please share that again?

23 Q. I'm sorry?

24 A. Would you please re-share it on the

1 screen?

2 Q. Yeah. Thanks. Sorry about that.

3 Have you got it now?

4 A. Yes.

5 Q. You say in your Recommendations:

6 "Intellectually, APPI generally has the cognitive
7 capacity to succeed. She does present with a pattern
8 of scattered, mild cognitive deficits. With sub" --
9 "deficits. With substantial discrepancy between her
10 strong reading skills and her mathematics ability,
11 which is nearly two grades behind her actual grade
12 placement, as well as problems with activity level and
13 attention, she requires special education supports
14 under an individe" -- "individualized education plan,
15 consisting of resource room support/tutoring for
16 mathematics."

17 Are you saying that that is what she
18 should have or that that is what she already has in
19 terms of the IEP?

20 A. That is what she should have.

21 Q. Okay. So as far as you know, was APPI
22 ever on an IEP before the time that you saw her?

23 A. I am not aware that she was on an IEP. It
24 seems like she may have been in some less formal

1 interventions, but it's not clear. I -- I -- she --
2 to my knowledge, she did not have an IEP.

3 Q. Do you -- do you know whether -- I think
4 there is someone in here -- somewhere in here in your
5 report you say something to the effect of, you know,
6 you're -- you're conducting this examination in a
7 lis -- litigation setting and there is not a
8 patient/psychologist relationship or something to that
9 effect.

10 Is -- is -- is there any means by which
11 these recommendations, to your knowledge, were
12 provided to the parents of the bellwether children in
13 order to determine whether, you know, your
14 recommendations could be followed and implemented?

15 A. So, my general practice and when I
16 complete evaluations at the request of attorneys is
17 that I return the work product back to the attorney.
18 I'm not aware of anyone sharing the information with
19 the family. And I did explain to them, as noted, that
20 I wouldn't -- that I was not giving them feedback when
21 I saw them.

22 Q. Gotcha.

23 So what happens is you complete the
24 report, you give it to the -- Mr. Stern in this case

1 and whether or not anything is done with respect to
2 these recommendations for the -- for the plaintiff,
3 you don't know at this point, right?

4 A. That's correct.

5 Q. Okay.

6 And you also say: "She should also
7 receive accommodations in the form of a private
8 testing environment and extended time on tests."

9 Do you know whether that has been
10 implemented?

11 A. I do not.

12 Q. Okay.

13 Now, the next recommendation is similar to
14 the one that you did for SPPI: "While IQ at the
15 current age is not completely predictive of long-term
16 outcome, APPI attention and learning problems do
17 increase her risk for negative outcomes such as
18 dropout or performing below her potential. Overall, I
19 would estimate her likelihood of not graduating high
20 school to be low (less than 25%)."

21 What's that based on?

22 A. So in this case there is no well-defined
23 clinical population to compare APPI to because
24 both her cognitive profile and her emotional profile

1 don't fit a well characterized disorder, so this is
2 based on my clinical judgment.

3 Q. Okay. So, the same questions that I asked
4 about SPPI I'll ask you now.

5 You don't have statistics or data with
6 respect to your patients who have the clinical picture
7 and diagnoses that APPI TPPI has to determine the
8 percentage of them who are not able to graduate high
9 school, correct?

10 A. I -- I would only be able to use the same
11 process I described in -- in EPPI case.

12 Q. So it's a correct statement, right, you do
13 not have the statistics or data for patients that you
14 have had that have experienced -- that have the same
15 diagnosis as APPI in order to determine, once they
16 get to the age where they could be graduates of high
17 school, whether they have or they haven't graduated
18 from high school, right, you don't have those
19 statistics and data based on your patient group,
20 right?

21 A. I -- I have anecdotal data but I don't
22 have data that would allow me to make a specific
23 quantitative.

24 Q. Well, what -- what do you mean by

1 anecdotal data, that, you know, some of the patients
2 that you have treated over the years who have reached
3 high school age who have these same symptoms don't
4 graduate from high school, basically, is that it?

5 A. Correct.

6 Q. By you don't know what the percentages
7 are, you don't know what the totals are, you don't
8 know -- you don't have the statistics, right, the
9 data?

10 A. We may be using the term "data"
11 differently, but anecdotal information is, I consider
12 that data. I don't have quantitative data that allows
13 me to make a numerical statement that's more specific
14 than this.

15 Q. So you're not -- you're not saying to a
16 reasonable degree of medical neuropsychological
17 probability that she faces an increased risk of not
18 graduating from high school because of this, do you?

19 A. I am not able to quantify that risk
20 specifically, but I think that there is an increased
21 risk.

22 Q. I see. But you can't quantify it. Okay.
23 So is it correct that you estimate, based
24 on your anecdotal data and her condition, that she has

1 a 75 percent chance of graduating from high school?

2 A. That's -- that's my very rough
3 approximation, yes.

4 Q. And then the next part of it: "There is a
5 moderate possibility that these issues may prevent
6 completion of college or graduate training (30-50%)."

7 Where did that approximation come from,
8 estimate?

9 A. So, again, that is also based on I have
10 anecdotal but not quantitative information to make a
11 specific statement. In her case she had more
12 significant impairments, like her sustained attention
13 performance was psychometrically impaired, and that
14 concerns me for her performance.

15 If I may refresh my memory on her. I --
16 I'm not sure if she had -- if she has any specific
17 vocational aspirations. I don't remember what they
18 are. Oh, if -- yeah, she -- she told me that she
19 didn't know when I asked her. But -- but I would also
20 be concerned about her big academic swings, like
21 between her math and her other abilities.

22 Q. Okay. Are there -- the purpose of IEPs
23 and some special -- individualized ed -- education
24 plans in general is to help the students address

1 certain impairments or learning difficulties that they
2 have, right?

3 A. So I -- I am not a teacher, but to the
4 best of my understanding, IEPs function in multiple
5 roles. In general they allow for students to receive
6 specialized services that allow them to receive a
7 maximally free and appropriate education that allow
8 them to learn as much as they are able to learn by
9 adjusting the instructional method or content. I
10 don't mean to be evasive with that answer, but IEPs
11 vary. For some children with relatively milder
12 problems, the goal of an IEP is generally to help them
13 be able to learn age and grade appropriate information
14 along with their peers, but for other children who are
15 more significantly impaired, the goal of an IEP is --
16 is not for them to maintain grade level.

17 Q. Okay. And the final sentence of this
18 Recommendation section is, you say: "And may prevent
19 her from success in a skilled vocation (that is,
20 reducing her work to simple unskilled work below her
21 potential if her learning and attention issues were
22 not a concern)."

23 What's the scientific support for that
24 statement?

1 A. Well, first of all, at present she is
2 already showing problems with following multi-step
3 directions. And in my experience most skilled work
4 is -- involves following relatively complex
5 instruction and most semiskilled work involves
6 following relatively detailed instructions. That is
7 also corroborated by her psychometric performance and
8 sustained attention testing.

9 Q. But what kind of -- besides the findings
10 that you have just described, where -- where is the
11 scientific support or literature that says that
12 people -- kids at her age who are 11 who have these
13 impairments are going to have an increased risk of not
14 being able to have a skilled vocation?

15 A. So, earlier I -- I -- we discussed the
16 findings in the context of ADHD. As I mentioned
17 already, in A[PPI] case, the cognitive and
18 emotional impairments both don't fit a
19 well-established profile that is seen in a large
20 number of patients, and so I don't think that there is
21 a scientific literature that looks at a large number
22 of people who -- who have the thinking and emotional
23 challenges that A[PPI] has.

24 Q. So there isn't any scientific literature

1 that you can point me to to support this, is that
2 correct?

3 A. I used, by extension, information from
4 other areas and so I don't think that APPI [REDACTED] has
5 diagnosable ADHD but she does have attention problems
6 and so I consider the -- the one that I already showed
7 you, and so I -- I do consider what we generally know
8 about people with cognitive -- with the kinds of
9 cognitive impairments and the kinds of emotional
10 problems, but, no, I don't think that there is a
11 scientific literature that assesses a large number of
12 people who are just like APPI [REDACTED] and follows their
13 outcomes.

14 Q. Okay. To wrap this up for today, I'm
15 going to ask you some questions about the issue of
16 differential diagnoses like we did with EPPI [REDACTED] SPPI [REDACTED].

17 What are the other -- and I want to use
18 terms that -- that, you know, you are comfortable
19 with.

20 With respect to the cognitive impairment
21 that APPI [REDACTED] TPPI [REDACTED] has that -- that you found and
22 diagnosed, where do you come down on what -- how are
23 you going to describe what your diagnosis is? I want
24 to use your words and then ask you a question about

1 differential diagnoses.

2 A. So, I think that A[PPI] has cognitive
3 deficits in things -- in verbal reasoning and higher
4 attention skills that would be unlikely to be
5 present -- that are unusual for her in comparison to
6 her other skills.

7 Q. Okay. So that impairment that you just
8 described, in your opinion that was caused by her
9 exposure to developmentally -- developmental lead
10 exposure, right?

11 A. That is the only potential source,
12 explanatory source that I'm aware of.

13 Q. So what -- what were the differential
14 diagnoses as to causation that you went through in
15 order to come to that conclusion?

16 A. So, I considered ADHD as described in the
17 report, but I don't think that she has symptoms that
18 meet the criteria for ADHD fully.

19 Q. I'm sorry. I think I -- I probably --
20 that was a poorly phrased question.

21 I'm referring to the -- the opinion that
22 you have that it's caused by exposure to lead as
23 opposed to something else.

24 What are the other things that can cause

1 these cognitive impairments besides exposure to lead?

2 A. So, they -- well, the -- the other things
3 would include things like other neurodevelopmental
4 disorders like ADHD, and that's why I mentioned that.
5 This is an unusual pattern and I'm not sure that I
6 have a specific list of other conditions that would
7 cause this. There are conditions -- there are a
8 number of conditions that cause scattered cognitive
9 deficits that are just not a consideration for
10 APPI [REDACTED], like epilepsy or other toxic exposures, but
11 I'm not aware of any other toxic exposures.

12 Q. Yeah, but I'm not referring to just toxic
13 exposures. I'm talking about other things like
14 genetics or, you know, anything else?

15 A. I -- I'm not aware of any -- the only
16 relevant -- there -- the only -- there is some
17 relevant family history in -- in APPI [REDACTED] case,
18 there are actually siblings with ADHD. I am not sure
19 about their ages, although at least one of her
20 siblings is a twin, and -- and then her mother had
21 anxiety, but she reported no history of anxiety prior
22 to the water crisis.

23 Q. So how did you rule out those as the
24 potential causes in your diagnosis as opposed to

1 developmental lead exposure?

2 A. With respect to the attention problems the
3 siblings have, that is a consideration, although I did
4 not diagnose ADHD for APPI [REDACTED], and so I would not
5 have a reason to expect that a family history of ADHD
6 would cause the different pattern of cognitive
7 problems that APPI [REDACTED] has. She doesn't have anxiety
8 and so likewise I wouldn't expect a family medical
9 history of anxiety to cause her other kinds of
10 problems outside of anxiety.

11 Q. All right.

12 MR. ROGERS: So it's five o'clock. Let's wrap
13 it up for this evening.

14 Let's get started promptly at nine o'clock
15 tomorrow. You know, we basically have quite a bit of
16 work left to do on Ms. TPPI [REDACTED] to go through the tests,
17 but I think it will be much faster this time, now that
18 I know what you told me about for SPPI [REDACTED], and then we
19 have to finish up on the other two.

20 So, it's kind of hard to predict an
21 endpoint, but let's just get started right away in the
22 morning and move through as fast as we can and
23 hopefully get this done by, you know, one o'clock or
24 so. Okay?

1 THE WITNESS: Will you provide a list of the
2 things that you asked me to provide you off line that
3 I haven't yet provided you, please.

4 MR. ROGERS: If I can --

5 MR. STERN: He will provide -- this is -- this
6 is Corey. He can send them to -- to me and to Patrick
7 and to Louise and we'll get them to you.

8 MR. ROGERS: Yeah, absolutely. You know,
9 Juliana will give us a rough transcript. I didn't
10 write all of those things down, so I would have to go
11 by memory, but absolutely, I mean, within a day or two
12 we'll -- we'll have those to Corey and he can tell you
13 what they are.

14 But definitely I need that textbook with
15 the, you know, page references to the scoring criteria
16 for the things that aren't in the test packages, so to
17 speak.

18 THE WITNESS: Okay.

19 THE VIDEOGRAPHER: This is the end of today's
20 deposition. We are going off the record at 5:02 p.m.

21 ---

22 Thereupon, at 5:02 p.m., on Monday,
23 October 5, 2020, the deposition was concluded.

24 ---

1 REPORTER'S CERTIFICATE

2

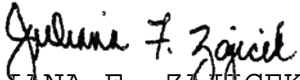
3 I, JULIANA F. ZAJICEK, a Registered
4 Professional Reporter and Certified Shorthand
5 Reporter, do hereby certify that prior to the
6 commencement of the examination of the witness herein,
7 the witness was duly remotely sworn by me to testify
8 to the truth, the whole truth and nothing but the
9 truth.

10 I DO FURTHER CERTIFY that the foregoing is
11 a verbatim transcript of the testimony as taken
12 stenographically by me at the time, place and on the
13 date hereinbefore set forth, to the best of my
14 availability.

15 I DO FURTHER CERTIFY that I am neither a
16 relative nor employee nor attorney nor counsel of any
17 of the parties to this action, and that I am neither a
18 relative nor employee of such attorney or counsel, and
19 that I am not interested directly or indirectly in the
20 outcome of this action.

21 IN WITNESS WHEREOF, I do hereunto set my
22 hand on this 22nd day of October, 2020.

23

24 
JULIANA F. ZAJICEK, Certified Reporter

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DEPOSITION ERRATA SHEET

Case Caption: Flint Water Cases

DECLARATION UNDER PENALTY OF PERJURY

I declare under penalty of perjury that I have read the entire transcript of my Deposition taken in the captioned matter or the same has been read to me, and the same is true and accurate, save and except for changes and/or corrections, if any, as indicated by me on the DEPOSITION ERRATA SHEET hereof, with the understanding that I offer these changes as if still under oath.

MIRA KRISHNAN, Ph.D.

SUBSCRIBED AND SWORN TO
before me this day
of , A.D. 20__.

Notary Public

1	DEPOSITION ERRATA SHEET
2	Page No.____Line No.____Change to:_____
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23	SIGNATURE:_____DATE:_____
24	MIRA KRISHNAN, Ph.D.